Supplement
not expected

2 cores per [illegible]
0–6 inches, [illegible]
6–18 inches, [illegible]
[illegible]

Monty Fischer 1

31 W. 8th St. Ol at 4,
Tunnel Dry Stone
Supper 6–7 P.M.
Sunset in Race St.
[illegible] in Canal & 12th St.

Graham Edgar
at Agricultural Exp. Station
Chemical Div'd.
engaged [illegible] in
soil investigations.

Leo F. Bersohnson
Chem. Div'd of Ky Geol. Survey.

Dear

[illegible] Hamilton
Tenn. [illegible] Monty well

Dr. Stolley. Die Cambrischen und Silurischen Geschiebe Schleswig-Holsteins und ihre Brachiopoden fauna. 1895. Kiel u. Leipzig.

Philippi, Cincinnati Journ. Nat. Anfbewahrt in Halle.

Philippi = Kokelen 1889.
Philippi (?) = Columbianus, Wahlenb. Pm. K S K M. 1880. p. 491.
Trans. Linnean Soc. Lond. Ser 2. vol VIII. pl IV H. fig 21. 22.
retigera. Hud.
ladia Lond.
scabrosa Lond.
multifurcata
Ulrichs sociatis = acantha.
furcaurantia
Sowerby
springer Hall
sublata Hall
Ag. bifurcata Hall & Clarke
fimbriata
crenistriata
tortuosa
rugosa.

Crinoiden Mendel.
aurora

1. Kiesowski. Akademie der Wissenschaften St. Petersburg. Coll. Volborth + Schmidt

2) Michaelis in Berlin

3) Tübingen in Lund.

4) Berl. Inst. Tot in Königsberg. Coll Nordling + Roemer.

5) Palaeontologisches Mus. Breslau C. F. Roemer.

14) Prof. Roemer. Tübingen.
mit Fimbrien
attached. Crania. Retzia etc.
Free. Phillipsia.
alme fimbrien
Attached.
Acet. aut. larger than Acet. post. = Phillipsia.
Acet. aut smaller than Acet. post. Cranidia.

Bauxite.
Hayes. U.S.G.S. 21st Ann. Rept. pt 3, 1901, p. 435.

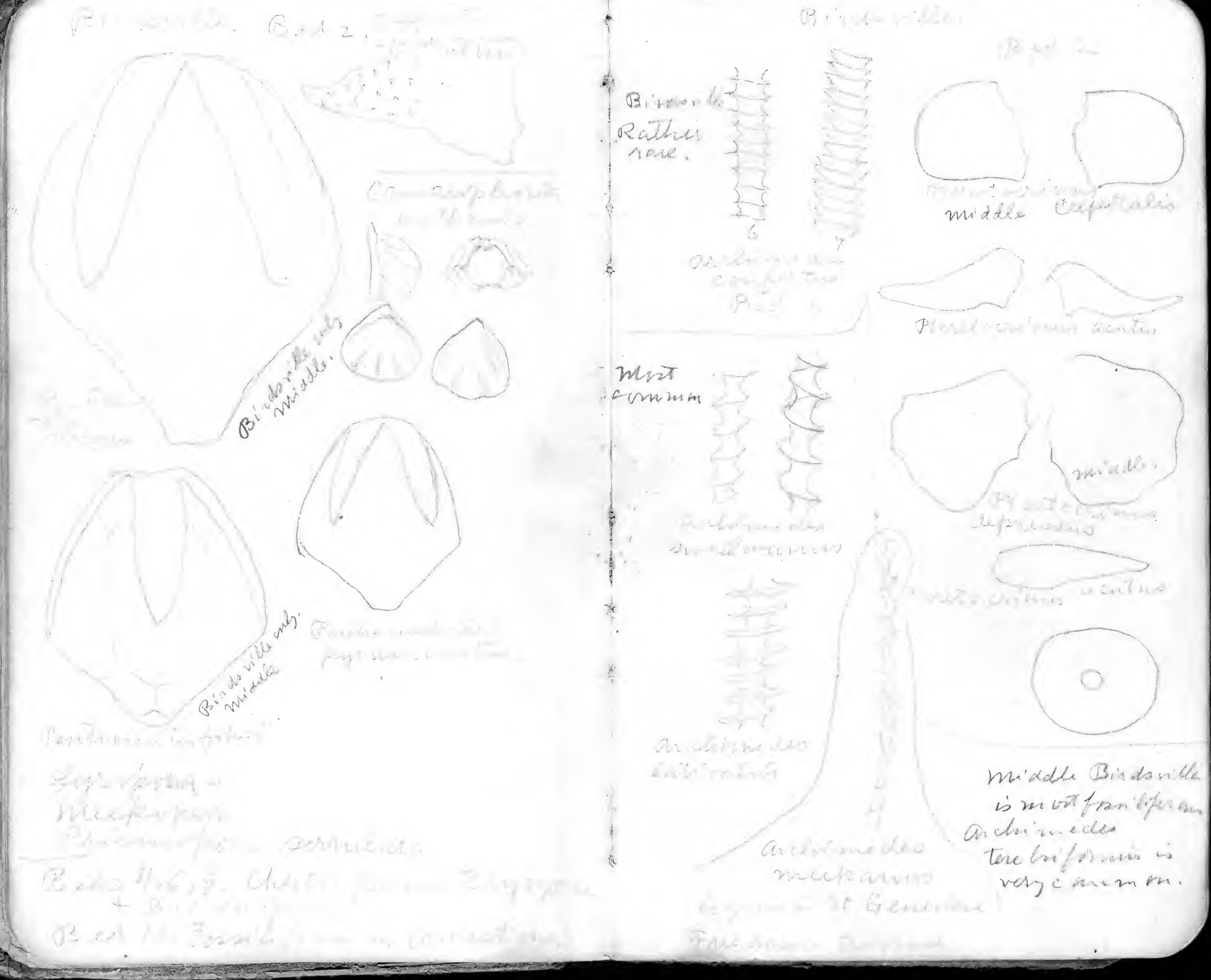
Roseleur.
Handbuch der Galvanoplastik, 1900. p. 235.
Useful Arts Rev.

Richards, J.M.
Aluminium. 1890.
Useful Arts.

Mint. p. 255
Aluminium. 1905.
Useful Arts.

Hardy
Aluminium. 1886.
Smith Inst. Ann Rept 1886
1887. p. 721

Brearley.
Analysis of Steel makers Materials.
1902. p. 353.


Bindsville only
Middle.
Bindsville only
Middle
Bindsville
Rather rare.
Most common
Middle
Middle
Middle Bindsville is most frondiferous
Archimedes terebriformis is very common.

Birdsville.

Camarophoria northern. Ind. 11th Ann.

Pentremites pyriformis. abundant,

Agoniatites
Tritonis
Tritonis

Pentremites pyriformis.
Tritonis, occasional
Birdsville abundant

abundant
rare. Birdsville.

Productus fine
ridges. silicified.

Productus cora
Less rare in Tritonis
More rare in Birdsville.

Lyriopora tenuis
Lyriopora Lonsdaleana VIII, 20,
Lyriopora [illegible] smaller species

Pentremites pyriformis
Common in Tritonis

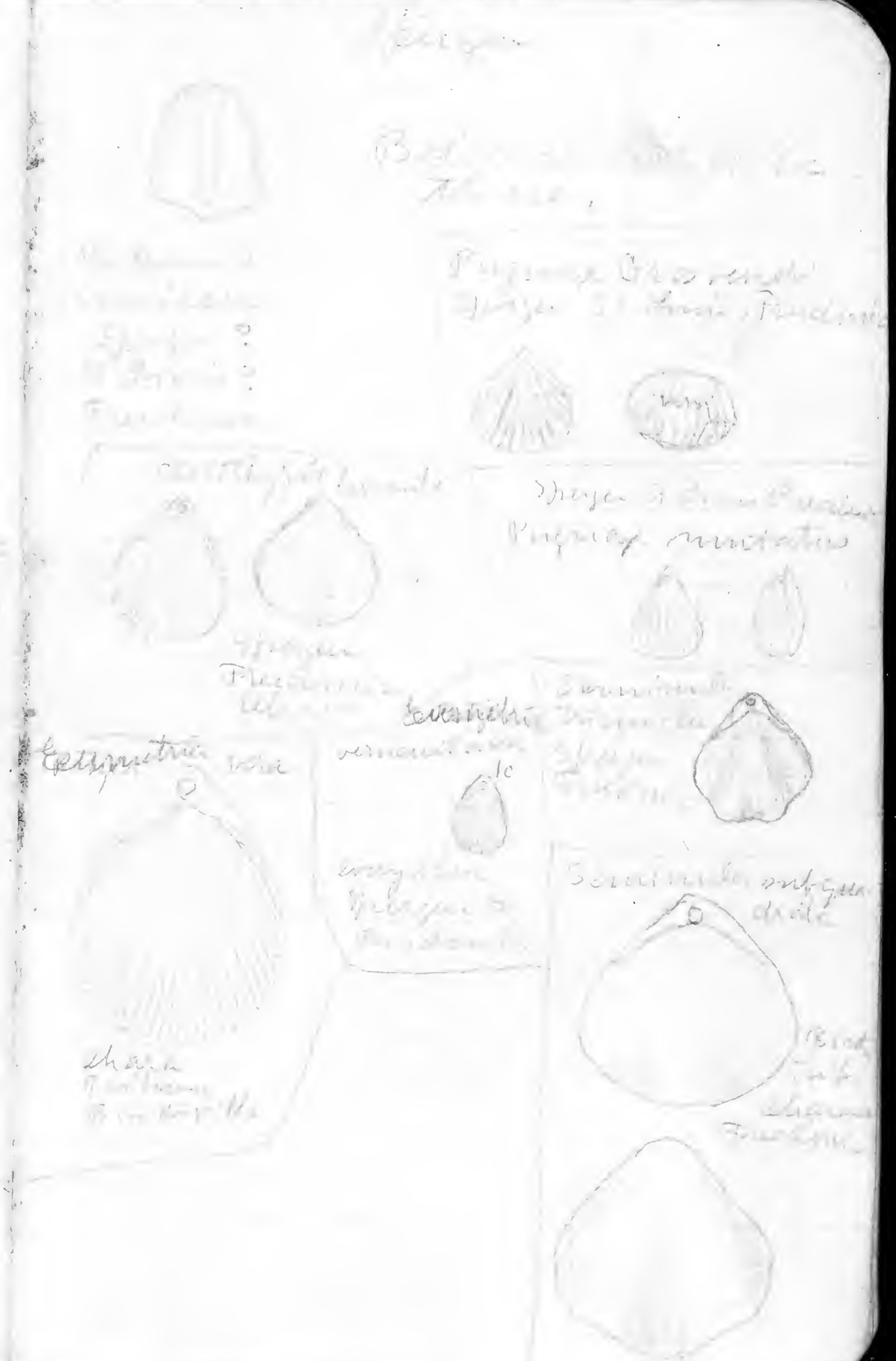
Cyathocrinus [illegible]

Lyriopora tenuis [illegible]
Birdsville = 2 × [illegible] VIII, 10,

Cyperaceae

XII.


x3


Ettipuetria
Serrinella
Serrinella antiquata
Chama

Mead
Breckenridge
Graham sketch
Hart
Greene
Taylor
Adam
Warren
Edmunson sketch
Trigg.
Lyon
Caldwell
Crittenden
Livingston
Christian. Wall maps.

Alluvial 40 ft [illegible] Blende
15 ft [illegible]
[illegible] [illegible] [illegible] 10 ft.

Impossible [illegible] [illegible]
of [illegible] [illegible] [illegible] [illegible] dip.

Dip [illegible] [illegible] 25-40 ft

Coming [illegible] II. [illegible]
[illegible] [illegible] [illegible]

[illegible] Impossible. Dens [illegible]
[illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] is
[illegible] [illegible] [illegible] [illegible]

So this is:
III. Sandstone [illegible] dip [illegible] 25°-40°.
II. [illegible] 5°
[illegible] [illegible] 1°
I. [illegible] 25-40°.

IV. c. Dark gray [illegible] [illegible]
b. [illegible]
a. [illegible] 25 ft.

b. Shales [illegible] Peters Hill at Gunton
Muffs along Rogersville.
[illegible] E of [illegible]
[illegible] of Thompson [illegible].
[illegible] with plants, fossils.

V. Light yellow SS. 60–75° [illegible]
[illegible] Cedar [illegible] of [illegible]
[illegible] Transition from Pangum
ville to [illegible] Pikeville.
[illegible] N to [illegible] Concordia.

VI. Bluffs – of Concordia
Yellow from [illegible] 20
[illegible] [illegible] [illegible]
Yellow [illegible] 6"
[illegible] 30
[illegible] light [illegible] 4"
[illegible] dark gray [illegible] 3"
Total 200
Decreasing to 10° at Cedar Creek.

VII. Shale SS. [illegible] to [illegible]
[illegible] [illegible] [illegible]

VIII. Structural Geology.
A couple of miles E of Concordia
[illegible] SW of Moberly [illegible]

IX. Yellow [illegible] 65°
VIII. [illegible] 200
VII. [illegible] + [illegible]
VI. [illegible] (1" [illegible] 1 layer 6") 200
V. Light yellow SS. 60–75°
IV. [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
I. [illegible]

Section E of Cooper's Creek

SS — 45° — 45°

Dark gray [illegible]
with pectenites 5°

Shale [illegible] 15° + [illegible]

[illegible] 25°

Limestone 35°

Yellowish [illegible] 15°

SS — Green shale [illegible] 10°

Gray limestone 10°

Impure [illegible] 35°

[illegible] in [illegible] of [illegible] 30

15 ft shale above water in creek
in deep pools in most of the
110 ft below summit of hill which
crowned with thick [illegible]
[illegible] 310 ft [illegible]

Fossils obtained
Archimedes intermedius
[illegible]
[illegible]
Hetaspis [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
Pelagiella
Polypora [illegible]
Orthoceras [illegible]
[illegible]
[illegible]
[illegible]

Section to [illegible] Mount
[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Thompson [illegible]

150° [illegible]
45° Brown shale [illegible]
5° Gray limestone
30° Big [illegible] SS
60° Green with chert
40° Oolitic L.
175° limestone

[illegible]

Ulrich Fossils [illegible]
Creek valley 1 mi West of Thompson
[illegible] 1 mi N of [illegible]
Archimedes [illegible]
Orthopora [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
Productus [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
Spirifera Leidyi
Spiriferina transversa
Spirifera [illegible]
Zaphrentis [illegible]

[illegible]

[illegible] County.

Poston Hill [illegible] mi.

SS	50°
Gray lime L	15°
Conglomerate [illegible] shale	2°
SS	12°
[illegible]	2°
[illegible] L	1°
[illegible] L	2°
[illegible]	5°
Fossils [illegible]	10°
Big [illegible] SS	50°
[illegible]	40°

Indian Hill E of [illegible]

SS ———— 50 ft.

Litchfield [illegible]
[illegible]
[illegible]

[illegible]

6 S [illegible] 10 × 150
[illegible] 35
[illegible]
flagging [illegible]

Sections:

[illegible]	100
[illegible]	1500
[illegible]	100
[illegible]	100
[illegible]	101

[illegible] S of [illegible]
Mr. John M. [illegible] farm, + 600
above [illegible]

Shown at [illegible]
[illegible]
[illegible]

Back of [illegible] Capt. 35 [illegible]
fairly good farming, on high flat
uplands. [illegible]
tobacco, grain + fruit [illegible].

1. [illegible] 10° – 35°.
Heavy [illegible] and
[illegible] very [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]

Hills N of Grand [illegible]

Lowest rock between Hills & [illegible] +
[illegible] the [illegible] [illegible] Creek
100 ft above creek.
Rising under drift [illegible] between
Franks Creek + Mr [illegible] [illegible]

On bridge between [illegible] Hill
& [illegible] [illegible] + North
Fork [illegible] Creek.

At [illegible] of Harrisburg
+ [illegible] [illegible] [illegible] [illegible]

At East Pine Creek.

At Hanover [illegible] it is 100 ft
below surface. [illegible] gas
well.

Hanover [illegible] Water [illegible]
[illegible] 660
[illegible] 712

Hanover [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] = 20° [illegible].

From [illegible] Pond creek on S side of
xxx [illegible] creek [illegible] [illegible]
xxx [illegible] alt; top 10° above
[illegible] [illegible] [illegible] [illegible] feet.
xxx [illegible] [illegible] [illegible] [illegible]
[illegible]

Cedar Grove landing at base of
hill.

Lowest rock Bluff one [illegible] at
[illegible] in [illegible] creek [illegible].

No. 2 Section 1

Drawn from Breckenridge 22.
20 [illegible] — [illegible]

This headed to course and
[illegible] [illegible]
[illegible]

[illegible] 20 – 250 [illegible]
[illegible]

On Dry Gulch STAR mine [illegible]
[illegible] Bassett Hill.

Former workings [illegible] on
Flats.

Forest reserve of Breckenridge

Just N of Hardscrabble on
Stephens [illegible] along
Hardscrabble Creek.

Beds as follows

Sandy shales — 10 } No 3
Hornfels 16 22 }
Mining shales 30 } No 2 LS
Limestone, [illegible] 25 }
Soft SS [illegible] 38 } No 1 SS
Hardscrabble Creek

Strike

Steep faces on Hardscrabble 4
Mostly [illegible] over [illegible]
[illegible] Hardscrabble Creek.
[illegible]

Top of hill No 2 LS — 20
Limestone (No 2) and [illegible]
Limestone, [illegible] — 45
Hornfels SS 79
Quartz [illegible] (No 1) 14
Bed of Clover Creek.

SS [illegible] No 1 [illegible]
[illegible] top of SS.

Complicated Mining of Breckenridge
2 mi S W of Golden is in this
SS.

Hardscrabble Creek Drainage
[illegible] by bridge near
North Fork.

[illegible]

SS 30
Black Fissile 2 } No 5 SS
Thin SS 14 }
Limestone (No 4) — 17
Covered space 75
SS (No 3) — 21
L (No 4) — 48
SS (No 2) — 32
Covered 10
[illegible] of [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Section below Table of Formations

Area of Dividing Line at Efficacious,
City of Lodi

SS No 3 —	25	
Pentamerus L —	24	No 2 L
[illegible]	3	
Buff L	5	
Calciferous L	10	
White Pentamerus L	5	
Blue L	5	
Red Shale	15	
SS No 2	30	
[illegible]		

[illegible]

150	SS —	No 3
100	[illegible]	
5	Black [illegible]	
5	Conglomerate	
10	[illegible]	No 2 L
10	[illegible]	
10	Conglomerate	
20	[illegible]	
11	[illegible]	
15	SS No 2 A	
10	[illegible]	
2	Black [illegible]	
35	L with [illegible]	average
40	[illegible]	
5	SS	No 2
25	[illegible]	
25	SS	
10	L	No 1
	[illegible]	

Width of No 2 where left around Windsor Stat, in Mean Co.

Dip and Direction

Form of the Clinton Limestone outcrop between Jordan & Bird creeks, inclination and 40° under E.

30° above R R on Building opposite [illegible] end of Clinton post, under [illegible] No 2 SS.

1 0 3 SS

[illegible] of [illegible] Stephens
[illegible] long [illegible]
[illegible] of [illegible]
[illegible] S [illegible]
[illegible] creek,
[illegible]

Hardwickes SE to Harper &
[illegible]

Oar Shallops are at base of
SS No 3. Fine water near.

Below Chester, Above No 3 SS
Below No 5 SS.
2 well area.
No 4 L
brown, No 4 SS
No 3 L
Hinsonville near W of Cleveport,
top of hill,
25 — S No 5
R 10 - 40 Marl & [illegible] No 4
15 Ferruginous, brace [illegible] L
20 S No 4
10 Sandy marl
20 Ferruginous
50 Shale
5 Yellow
5 Ferruginous
10 Stain do.
30 - 152, Measure 22.

R fine ravine [illegible] building rock
Coal measures.

Similar section in Clearport
to Mattingly.

No 5 Filmed on
Alling & Cuthbertson Paper
Small Card of Country Print,

Negative Film of 3 and
Kodak 3 E if Satisfactory

No 5 35

Pipe & Bowl of Clay Pipe found in
Cuthbertson Collection

Bulls of Pompeii.

50 s
10 Shells
1-3 Coral } No 5 35
3 s 35

40 Shells
Lithuanian
Green Marble
Buff do
Sicilian Marble
Italian Marble } No 4 L.

50 s
45 s
2
Coral
Coralline
3 s
15
5
5
2
1
15
5

No 4 3 s
Clay Pipe & Bowl found in Cuthbertson Collection
No 5 L.
Negative Film
3 s

Italian Marble
Fragments Lot
Pompeii
No 4 L

Graves Co.

Graves Co.

in N of county, 150 - 200°

Gravel

Louisville

Tile for Map of
Nearby Station on L & N R.R.
Big Louisville (N of South Park)
[illegible]

Lumpkin Co			Johnson Co	
Sculptured	100-175	L,	149-177	I
	73-165	S	120-150	II
Bivalve 315-430	65-115	L	60	III
	37-94	S	50-80	IV
	40-125	L	68	V
	102-250	S	72-100	VI
Intrusive	150-150	L	156	VII
Cyphers 55	60-150	S	150-250	VIII

Olive 121 Bivalve Bluff
Rockdale 4 " "
Freedom 56 " "

Coarsville
at very base

Surf 6"
light brown
heavy sandy brown
clay, 2x-5% Z.

Subsoil 30
clay 20-50% Z
[illegible]

Fine sandy loam

Surf 6-15"
fine loose sandy loam
light gray or
orange, loose

Subsoil 28"+
red sandy clay
[illegible]
[illegible]
[illegible]
Surface drainage
good
[illegible]

Mid brown

Surf 8"
mid brown
light gray

Subsoil
Yellow orange or mid brown
silty clay, with light yellow
or red.

Residual surface
Boulders. Flat uneven to
irregular, [illegible]
tobacco, [illegible]
[illegible]

Clay loam

Surf 8"
silty brown
mid dark brown

Subsoil 3°
silty clay brown
red, heavy

Residual at
base, under-
lying
stony fields
Best farm land.
Tobacco heavy
yield, but not
best leaf.

Bedford

Mt Pleasant

1/8 mile east of West Pleasant

42 ft Grand Monoliths
Bagged
Labeled
Transferred

Slightly further east 1/2 mile east of Mt Pleasant, where road intersects Fairview Turn off North from a glacial striated boulder 2 ft in diameter.

Along on Bedford Mt 2 miles 1 mile east of Fairview at foot of Bagged & marked.

Potter Hill East side,

Foraminiferous clay ——— 16½ ft
Disintegrated limestone 2½ ft
3 ft

10 ft.

[illegible] Spot up

West of Lima with church

23° { [illegible]

28° { [illegible]

34° { [illegible]

22° { [illegible]

30° [illegible]
Limestone [illegible] from green wood
Rough Decks.

No 3 [illegible]
No 2 [illegible]
No 2 [illegible]
No 2 [illegible]
No 2 [illegible]
No 1 [illegible]
No 1 [illegible]

Directly west of 1288, SW of Sharpsville, Clinton Co. Ind.

½ mi.

Bedford Lst.

10 ft clay, uniform, residuals from parent rock.

1 ft 6 in thin bedded ore + clay in between, some of the clay fractured, likely the ore collector.

1075
110
65

1030
13
65

Ht: 5 ft.

4

Spirifer leidyi? bifurcatus / leidyi. small.

The distinguishing feature of this form is the intercalation of one plication on each side of the 2 forming the main axis of the fold, and of 4 additional plications on each side of the fold, on that part of the lateral slopes which is nearest the fold.

Also, one additional plication on the lateral slope, next to the one bordering the sinus.

~~These features apparently are not possessed by Sp. leidyi.~~

Since the types of Sp bifurcatus do not show intercalated plications, our specimens can scarcely be identified with the latter.

Most of our specimens are distinctly smaller than Sp. leidyi.

Listed by Ulrich from Spergen to Birdsville.

Similar specimens with less prominent plications occur in Freedonia

Spiriferina spinosa?
norwoodi?

Our specimens have the surface ornamentation of Sp. spinosa (Hall + Clarke pl. 35) in a general way, but the spines are much shorter, almost granular, and are confined chiefly to the ridges, being usually absent in the lower part of the grooves. In specimens as large as that figured by Hall + Clarke, the number of plications on each side of the sinus usually equals 5.

Our specimens may agree with Sp. norwoodi, but usually are not rounded at the ends of the hinge line. The number of plications on each side of the sinus is 6, and this number sometimes occurs also on each side of the fold. The plications are stronger and narrower, due to the greater depth of the intermediate grooves.

Found in Ohara. { Paynesville. Ey Hardin Spgs. Bowling Green

Listed by Ulrich under Sp. norwoodi from { Tribune + Birdsville, Ohara, Freedonia, Spergen.

Sp. spinosa is listed by Ulrich from the Tribune + Birdsville, and our specimens are much less spinose.

Boone.

1577. Clay. 3 mi. N. of Burlington. Thin strati red layers, varying tints of light brownish gray and slight blue colored.

Kenton.

1581. Siliceous Grit. 1st toll gate. 2 mi from Covington on Lexington turnpike. Shales.

1582. Same. used for molding sand.

1583. Clay. Cincinnati Group. Same locality. just below the grits above.

1584. Clay pit at brick yard. Head of Russell street. 9 ft section. Covington

1585 Marly shale. Junction of Ohio and Licking Rivers. 12 ft above low water mark. Cincinnati Group.

1586. Marly shale. Five shales between impure limestones. Whitehall. 5 ft above low water mark. No fossils.

1322. Sand. Newport Reservoir, Columbia Trace, 1½ mi NE of Newport Reservoir.

1323. Sand beneath Brickclay, Columbia corner of Harris St. Newport.

1324. Virgin soil. Upland woods fagus. Gen. G. B. Hodge. Flat Woods. Waters of Phillips creek. 1½ mi SE from Grants Lick.

1325.

Campbell Co.

1315. Yellow clay shale. Cincinnati Gr. ¼ mi from Newport. Alexandria turnpike. Upper blue clay. Dark grey soft shale.

1316 Wind from silicious sandstone, of Dr Owen. 10 ft from surface. Galleries Gap. Buff colored frieable from gravel.

1317. Clay shale. Newport Reservoir. 340 ft above Geol. 6-½ ft from surface. Clays mixed with a few limestone layers.

1318. Newport Reservoir. Upper blue clay. 320 ft.

1319. Brick clay 3 ft above bitter water creek. Newport.

1320. Sand clay 3 ft from surface. Not Vanceburg red. ½ mi from Alexandria turnpike.

1321. Ferruginous clay, wide spread. 1 mi N of Grants creek. N head waters of Phillips creek.

Andromeda at Pompeii in
Pompeii Northampton State
Museum
Associated with Bronze vase

F R Cooper Reed

Mus of L Eccles.

Sparta. 40 ft vein at top of Cynthia
1 mi E of Sparta. The
Cynthia vein dips eastward
and up to the point the
dips westward.
At Sparta the top of Cyn
Dip can be 12 ft below
RR station.

82
102
184

[illegible]

[illegible]
98 ft [illegible]
[illegible] RR.

260
184
76

Grand Central 430
431 Lumsden
60
50
10 ft above
Cynthia

82 ft
98
14
10
194.5

[illegible] at [illegible]

[illegible] cut

[illegible]

[illegible] 273 [illegible]

[illegible] Common

[illegible]

220 [illegible] [illegible] ½W

[illegible]

220 V [illegible] [illegible] ⅕A [illegible]

[illegible] not [illegible] killed

[illegible]

[illegible] killed.

[illegible] V [illegible]

at times without [illegible]

Amperes [illegible]

Volts [illegible]

Frequency [illegible]

Time [illegible]

Sleepy [illegible]

[illegible]

[illegible]

Fingers [illegible]

Breathing [illegible]

and [illegible]

[illegible]

Head raised to decrease cyanosis.

Pulse not tense.

Artificial breathing 15-20 per min.

Breath not stopped by spasms.

Nothing sense when succussed.

Rapid breathing of order of feet.

No alcohol.

Kept up for hours.

Physician:

Injections of camphor.

Submitted resuscitation.

Heart massage.

Last resort. Second application of electric current.

Specimen of [illegible] found [illegible]

[illegible]

condition.

[illegible]

Gerdes the Principles of Direct [illegible]

Robert Hutchison.

Edward Arnold. London.

Section
Section to Settlemyre road,
½ mile E of Ridgeway Church.
Top of section on J F Hartness land.

43 ft Loose chert fragments in soil along side of hill, with fossils, in the Silurian. But it is not found in certain situation this belongs to the Hardy dolomite, at least no Clinton outcrop has been found.

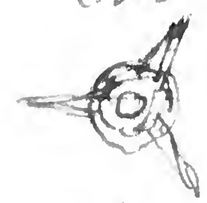
42 ft. shaly argillaceous rock, with lenses of tell rido and crinoid heads near top. This is the upper part of the Rockstone formation and resembles it closely.

30 ft thin shaly or siliceous limestone. This is evidently merely the calcareous phase of the upper Rockstone. Oft it is the representative of the Niagara Dolomite elsewhere but not here the top. This part of the section is best exposed ½ mile east of the Bridge, at the Big Offset on George McKinney's land, although it is exposed also in the Watson farm.

6 ft cherty white limestone, exposed on both banks, best at the big Bluff, at some localities the lower part of the overlying section is also cherty. This would include these sections appearing at Hart.

55 ft. Black Chattanooga shale, thin fossiliferous, on George McKinney farm at big fault.

8 ft. Siliceous limestone, blue gray, at the Clark, with no trace of fossils except one large Platyceras 2 ft from the top which contains crinoid stems.



Nothing else recognizable. This layer is only 8 ft thick.

Very salient on George McKinney farm.

Nigel Sawyer's farm adjoining home at NW corner of Section Township 1 Range 1 ½ miles east of Bardstown Cross roads, South side of creek.

Bared New Providence crinoidal limestone.

Phosphatic nodules seen 4 inches low.

Black shale, about 10 feet exposed above creek. Base not seen.

NW [illegible] a short distance south of here in the first cutting south in sec. 5 for the Barren River bridge, a short distance south, a wide stratum of limestone, and a PO Box marked [illegible] Clark occurs here.

First limestone in abundance, apparently the Hardinsburg section. NW of the Barren River bridge [illegible] the Otter Creek bridge a short quarter mile = ½ mi. Cutting [illegible] occurs at the S end of the Lucas hill. Clark occurs above the Lucas. Limestone at N end of Lucas hill.

NW of station on west side of little Rumsey creek. 21 ft of crinoidal limestone interbedded below in the 27 ft section exposed. Contains Bryozoa, Cuthiris and Spirifer as in Butler County. Part 1/4 mile NW of station on the R.R. [illegible] in large [illegible] not [illegible] limestone, but [illegible] to contain the [illegible]. The Spirifer appears to be [illegible] specimen. Judging from the presence of Spirifer in large levels of limestone with Spirifer also the [illegible] apparently [illegible] carried out from the face of the bluff in the railroad.

1905
45
1950

Pt Pleasant.

George Jerry Delaney
Dutchtown, Belmont

Bolder ledge about 4 feet above the water, 2-3 feet thick, many layers below the bolder ledge.

Only one ledge of bolder ledge that was worth quarrying, about 6 in thick. It was good as ledge below.

About 3 or 4 good ledges below the bolder ledge, one 12-14 inches, two or three from 3-6 or 7 inches.

Never quarried the higher ledges.

Best quarries.

Used for building stone, abutment of Suspension bridge on Ryan St. Occasionally from bolder ledge, Sinks & Ayers.

Hill quarries worked from the beach quarries in co. inclined inward.

Beach quarries not long after, some after.

Hills + Hyde park on Madison road.
Take Madisonville Hyde Park car.

P. J. Delaney, 1768 Z McMillan W H
North 3379 R.

Mr. Cox first quarried.

Wayne Armacost + Pendergast quarrying, — opened up in in 1867.

Last quarry in 1887.
Ernest Armacost.
for City and Library building.
Turtle Creek came below the bolder ledge.
Bolder below water.

Non-Reckoned

Reden

Bellevue lyng = 22

37 } Cairnmuir = 52 down to Strip major,
28 } Strimagorlloch 69 = 70 { 17 down to cabinet

22 | Mt Hope 17.5 = Dalmunach

14 Blackfordbridge

Mt Hope

0 - 91

0 - 10.5

28

Bettel 730
160
770 above
474
326

28 ft to Cape

22 ft

6 mi S of Brookville on road to Mt Olivet. N of bridge.
Trinucleus + Plectambonites above.

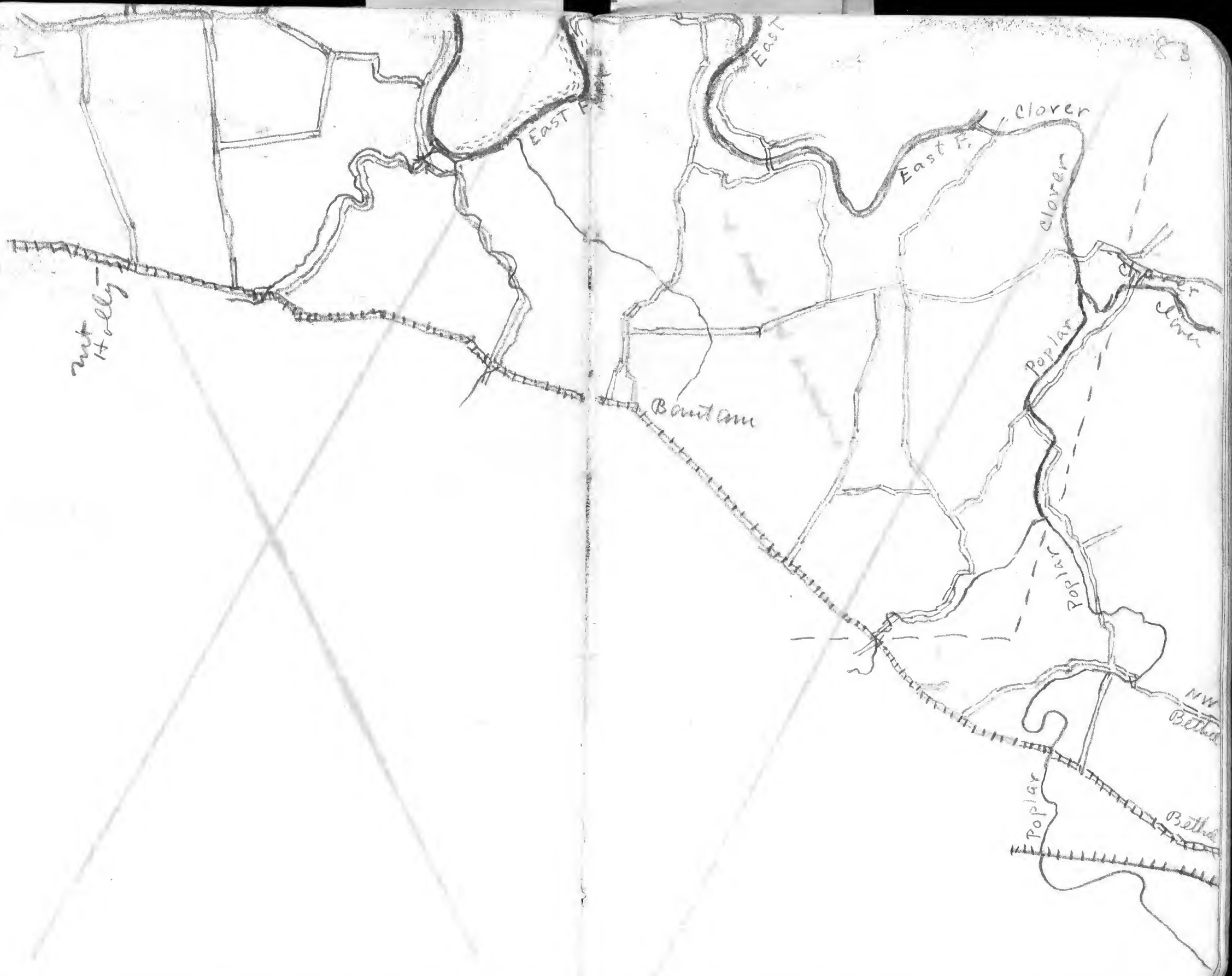
34.5 ft. Limestone = Nicholas, from 3.5 to 38 ft above bridge across Camp Creek.

---

7 mi. S of Brookville at bridge across N Fork on Mt Olivet road N of bridge

Dalmanella emaciata not common
15 ft bryozoans at several levels
~~72~~ Plectambonites abound at top.
~~72~~ 6 ft Interval
Large Dalmanellas
66 ft Interval.
Bridge level.
20 ft Interval
North fork level.

No sign of Nicholas beds here. What does this mean?


East
East F
East F.
Clover
Clover
Clover
Clover
Poplar
Poplar
Poplar
Bantam
NW
Bath
Bath

84 Entered in [illegible] river. Trip [illegible] from Brookville.
Plectorthis neglecta (= found with the plicatella!)

[illegible] of [illegible], having [illegible] in the [illegible] Strophomena [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] but the Strophomena [illegible] is not found in these [illegible] [illegible] other Plectorthis [illegible] in [illegible] higher [illegible] [illegible] [illegible] [illegible] a medium [illegible] along with the Plectorthis but not well exposed.

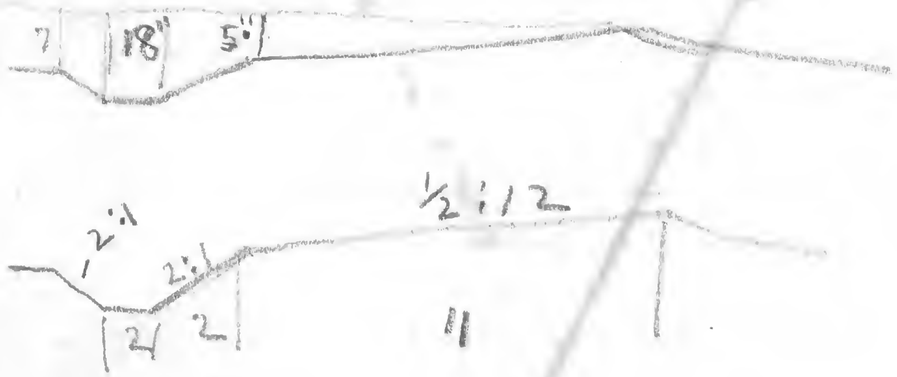
250 ft to base of [illegible], with Str. [illegible],
37 ft to [illegible]
33 ft above RR bridge.
320 ft [illegible] above RR bridge.
60 [illegible]
380 ft above river [illegible]

Dan's quarry Cin. O. New [illegible] [illegible] Avenue on [illegible] St.

Newport 6-12' [illegible] 340'
320'

Country [illegible] of Reservoir,
Pleasant [illegible] Middle [illegible] "
Newport, Reservoir, [illegible] "
Strong [illegible] E of [illegible] [illegible]
Most of [illegible] [illegible]
N. [illegible] and Dela. [illegible]
is abundant.

Screenings = ½ in + less.
Steam roller + crusher.
Proper drainage.
Rolling earth foundation.
Macadam trim stone
Screenings for binder.
Consolidation with steam roller



Minimum longitudinal grade = ½%.

Bottoms of 2% should be faced with cobble stone and underdrained with tile.

Middle of road not less than 15 ft between ditches. Better 22 ft or more.

Side slopes not more ½ in 12 as that slope will not follow out

Days of wheel carfare in lieu of wagons where lifting does not exceed 200 feet.

Short grades on common grade machine for levelling roads.

On the best earth roads only ½ as great a load can be carried as on a good macadam road

A short 8% grade is all right as economy.

2 to 3% is better if it can be secured cheaply since there is angle of repose of wagon and further than can not draw load.

Ditches triple depth for drainage in wheel rut effects.

Gravel roads.

Gravel should be screened so as to remove from distribution.

Stone crusher
elevator
rotary screen
bins,
small dump car.

The breaker & screen rolls make it possible to use rocks not 1½ in long.

Stone rocks passing through 1½ in screen are likely to be after thrown 2½ in screen. The screen should be used for small lengths or battle for dry

Screenings = ½ in & less

10% screenings are used in road bindings.

Surface traffic does the binding.

dust is necessary for the binding. also little water. Capillary action.

Sprinkling is necessary for binding.

bins for road gravel with but special loading.

Sprinkling & screenings.

1 crusher 15 in with extra screen $1000

Portable bins	200
1 15 H P engine	200
1 20 H P boiler	600
12 wheel scraper	500
12 drag scraper shovels	120
2 steam drills	500
1 15 H P boiler for drills	400
Water & steam pipes for crusher	300
2 sprinkling wagons	500
1 10 ton steam roller	2300
Outfit	$6900

Stone up to 3¼" neck

Provide turnouts. Haft by
long 320 ft, 16 ft wide,
9 ft opposite fence
where on the next fence.

Top of Eden at east end of depression

Zygopleura circumstriata, large
form, near base of Mt Hope, about
4 ft above base. Pycnodonta
hoeninghausi like small Ostrea. Ostrea
Calymenella of Smith & Maine. The
4 ft above base

Strophomena planumbona and
not rugosa. Leptaena rhomboidalis
with its ventral valve very deep, opens
almost at right angles to the Hope rock
13 ft above base.

Pt. Ulrica dilatata large.

Strophomena planumbona with
radiating bristle raised wedge
of magnesian type.

Platystrophia ponderosa large with
narrow depressions

Cyclonema with reflections

[illegible]

Up to 60½ ft [illegible]

at 60½ ft up Str. megaphyllum [illegible]

[illegible] 62 ft [illegible]

[illegible] 5½ ft megaphyllum [illegible]

[illegible]

72½ ft [illegible]

84½ ft [illegible]

106 ft [illegible]

113 ft [illegible]

[illegible]

Bellerophon 22 ft
Fairmount 11 ft interval
" 20 ft interval
straight sinuata limestone
83½ ft 7 ft interval
[illegible]
3½ ft interval
7 ft Str. megaphyllum

Bellerophon
31 ft interval
— Str. sinuata
46 ft interval.
7 ft Str. megaphyllum

82½
23
60
56
10

4½
1½

S Lebanon

0–22 ft Dip Blue, fine-textured clay, usually brown top.

27½ Zyg. Cincinnatiense Chatham,

39½ Pl. Platys. c rather thin in limestone.

41½ Pl. Platys. crowded thin in limestone.

51½ Rather [illegible] day. Mount Pleasant in Bellevue, probably top of Farmount.

62½ Clay day. Plenty of Refinesquina here but not Refinesquina. Also some large Platystrophia, at least resembling species in Bellevue, nearly perfect specimen from multisect.

62½–74 ft. Limestone abundant Zyg. bellatulus, Refinesquina [illegible] abundant with [illegible] fragments.

74 to 86 ft. [illegible] with Ref. abundant [illegible] Zyg. bellatulus.

86 to 88 ft. Top of section. Mine [illegible]

Thinner bedded above.

72 ft. of Corryville.
2 to Eaton.

Top of section.

Not Oxbow 20 ft.
Corryville 72–74 ft.
Bellevue 23½ ft.
Farmount 62½ ft.

50 ft { 3 ft base of Corryville.
23½ ft Bellevue
22½ ft top of Farmount.

40 ft Farmount.

20 in

2 in

4 in

12 in

14 in

24 in

Wolverhampton

4 in.

20 in.

2 in.

4 in.

4 in.

12 4 in.

12 in.

C

14 in.

24 in.

98

2 ft along,
9 in along [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] 12 in

[illegible]
[illegible]
① [illegible]
[illegible]
[illegible] 18 in

[illegible]
[illegible]
[illegible]
[illegible]
[illegible] 20 in

[illegible]
[illegible]
[illegible]
[illegible] 20 in
[illegible]

99

[illegible]
~~[illegible]~~
~~[illegible]~~
Aug 7 Sep 8.
[illegible]
48 in

[illegible]
[illegible]
[illegible]
[illegible]
Struggle [illegible] 28 in

[illegible]
[illegible]
[illegible]
5 [illegible]
[illegible]

A[illegible]
[illegible]
[illegible] 18 in
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] 48 in

[illegible]
Struggle [illegible]
[illegible]
[illegible] 24 in

Cupboard

8 in.

24 in.

17 in.

62 in.

54 in.

72

A

18 in.

B

18 in.

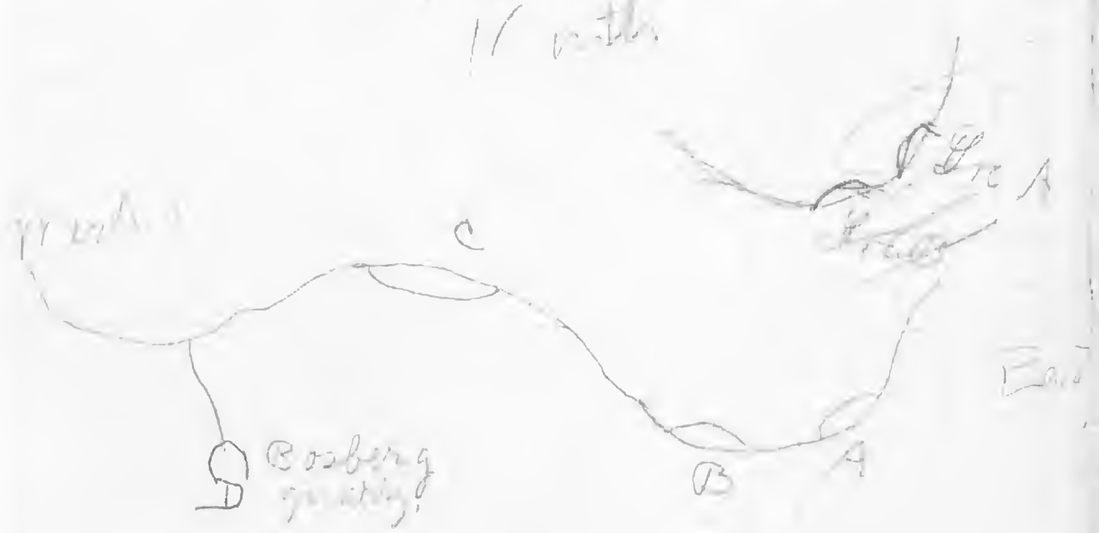
C

33 in.

at various levels from top to base, at least 2 feet in area

dark band

Loc C, N side of stream
W of Bridge Mills. Warren,
Bellstown
11 mth.



5 ft [illegible]

5½ ft [illegible]

5½ ft [illegible]

[illegible]

1½ [illegible]

2½ ft [illegible]

1½ ft [illegible]

2 ft [illegible]

Boobing gravity Loc. D.

(The Boobing gravity is 16 feet deep, chiefly in shale layers.)

1 ft [illegible]

1 ft [illegible]

3 ft [illegible]

[illegible]

13 ft [illegible]

21 ft [illegible]

5 ft [illegible]

29 ft [illegible]

East of Bellingham, Wash.

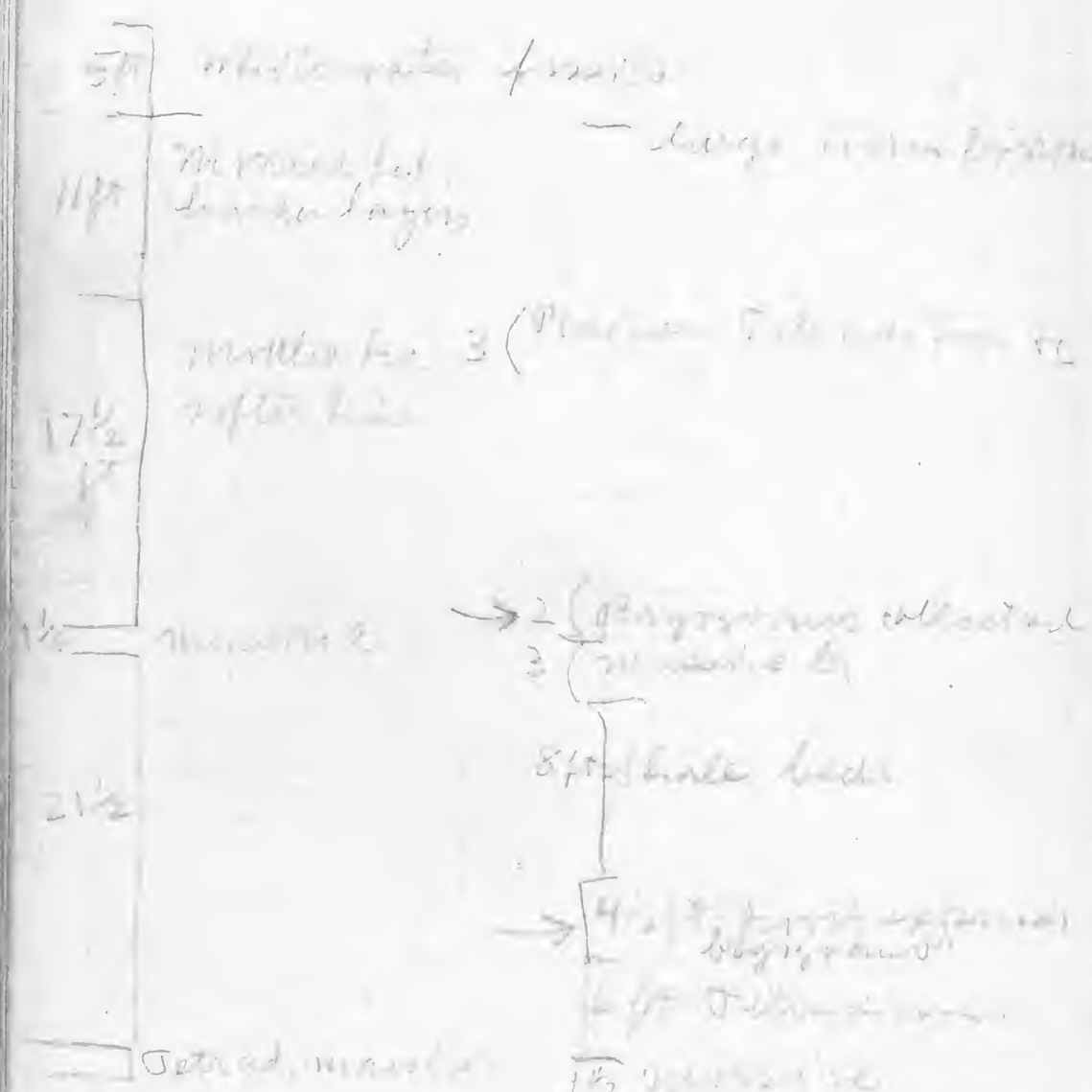
A [illegible] hornstone and broad [illegible] 2 [illegible] [illegible]
The shale layers will [illegible]
[illegible] of the [illegible]
[illegible]
[illegible]
B [illegible] layer in [illegible] [illegible]

C [illegible] shale [illegible]
[illegible]

Letter.

1 ft [illegible]
12½ ft [illegible]
5 ft [illegible] layer
1½ ft [illegible]
4 ft [illegible]

The [illegible] layers are [illegible] the [illegible] of this [illegible] [illegible] Bellingham [illegible]


5ft
11ft
17½ ft
1½
21½
2
3
8ft
4
1½

2

1. [illegible]

2. A small stream [illegible] from beneath [illegible] about 1 foot above water [illegible] an underground stream,

3. [illegible] drip. The mud at [illegible] bed then [illegible]

4. Many springs spring [illegible] stream [illegible] about [illegible]

5. [illegible]

6. At 3.30, [illegible]

7. At 4.00 [illegible]

8. At 4.30 P.M. [illegible]

9. At 5 P.M. [illegible]

10. At 5.30 P.M. I came out [illegible] a short distance down stream [illegible] bridge [illegible] from dry.

10½ [illegible] the [illegible] empties here.

11. At 5.45 P.M.

12. Heavy [illegible], underground?

13. At Buena Vista, immediately [illegible] the Cumberville bed is well exposed. The top of the High bridge is a short [illegible] 2 inches thick, at 866 U.S.G.S.

14. Chalky top of High bridge 2 inches short, with Cumberville exposed 10 ft beneath to 11 ft above.

15. Chalky top of High bridge 1 in. short, with remains of Cumberville [illegible] near 950 U.S.G.S.

16. Top of High bridge [illegible] Cumberville at 865, just N of U.S.G.S. 860 [illegible] The chert bridge at top of High Bridge is not a [illegible] but the [illegible] 2 feet [illegible] thick, [illegible]

17. At top of [illegible] road [illegible] West is [illegible] East is [illegible] near 990 U.S.G.S.

18. Near point the [illegible] contains round clasts, a quantity of concretions [illegible] from [illegible].

Before reaching bend of road, there is [illegible] [illegible] [illegible] [illegible] of road towards [illegible], there [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] Further [illegible] the [illegible] is [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] NE. About 100 [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] This [illegible] [illegible] [illegible] NE [illegible] [illegible] [illegible] and from there [illegible] [illegible] [illegible] [illegible] [illegible]

— East [illegible] [illegible] [illegible] [illegible] black shale [illegible] [illegible] house [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] concretions.

— Going from the [illegible] found SE of the house southeastward [illegible], the stream running [illegible] fault, blue limestone with slaty [illegible] (Lake plain) is found below the argillaceous clay rock [illegible] the same [illegible] ([illegible]) and above this is the [illegible] clay, rock without fossils.

— Going southward along the stream east of the [illegible], there is [illegible], [illegible] [illegible] as far as the [illegible] east of the stream, at the top of [illegible] southward, black shale is exposed apparently. I did not go to see it but judged from the distance.

—

19. Further south near the point I figure marked 19, [illegible] [illegible] on the eastern side [illegible], there is a sudden southward dip for about 30 ft west of the stream and then the Black shale suddenly appears, apparently east of a fault. Is there a [illegible] at the south end of this [illegible] between the [illegible] and the [illegible]?

Going from 19 NW [illegible] [illegible], [illegible] [illegible] SE of the [illegible] along the [illegible] of the [illegible] fence.

The fault material directly west of the fence consists of an argillaceous rock which I assume to be the Reading stone. This rock forms the main fault.

Directly west of the fault there is a fossiliferous limestone which I assume to be Farmington but I do not know. I assume a fault directly west of the fault.

20 Before reaching 20, when the creek is out of the main fault approaches the county road running east from the pike. The rock slopes east. Then the Black slate is seen sloping NE. Below this fault rock, the non fossiliferous Brandt Sandstone shows up, either lenticular or sloping steeply west.

A short distance SW of 20, directly east of the first house south of the junction of the aforesaid County road with the pike there is a gorge leading down from the road junction. Here Hebertella occidentalis is abundant 4 feet of pitted the floor of the gorge. The underlying rock is blue shale, is very irregularly bedded, and that north in 3 feet of very fine grained limestone with Spirifera [illegible] which resembles the High bridge rock in general appearance. The great abundance of Hebertella is against

the High Bridge age of the underlying material.

= Perryville bed

21. Hebertella occidentalis in crystalline limestone.

22. Pseudo Salina sloping westward.

23. Fairmount bed, good but low exposure on Hardy road.
Tay flat S. Lichfiana. Bryozoan.
Hebertella occidentalis in depressed beds,
Platy Strophia, fern dens.
Strophomena [illegible]
Constellaria florida
Cyclonema tuberculata
Stictoporella [illegible] "Hilli" Fauch

24. Large depression like a long sink in Fairmount bridge. Another smaller sink [illegible] further SE.

25. Top of fossiliferous Fairmount bed. Platy fenestrata. Monticulipora molesta. C. Hebertella occidentalis overlaid by thin shaly unfossiliferous limestone. Date Leaper.

26. Quarry in Fairmount. 25 ft high. Strophomena [illegible]; C. Constellaria C. Platy fenestrata. Stenopora without anterior tubes, posterior part not exposed. No [illegible] found. [illegible]

29. Orthodiscus abundant - upper Tammount Slate, Trinderena.

30. 31. Garrard co., some additional ponds have been constructed for watering stock. = Small Brown

32. Tunnel one full of water found dipping steeply east, under the Garrard co pond. Down the hill northward is thin bedded sandstone with lime. stone layers, vertical, representing possibly the Mt Hope.

Farther west is limestone with Dalmanella sculptata, Pleotomaria, Stropheodonta, Strophomena tenuis in top of middle slope, Trinderena.

33 Dalmanella + Pleotomaria common. Eden.

34 - Strophomena abundant 50 ft below and in front of tunnel between layers 33 + 34. This plus a point between 33 + 34. Possibly this is a continuation of the Bindett Knob limestone or it may be at least a branch of the Eden. This strophomena magnifolium layer is assumed to be the base of the Tammount & connects some little distance as far up as the road level.

Tammount
Trinderena,
Orthodiscus, Strophomena tenuis,
abundant, Dalmanella sculptata, Pleurotomaria
Constricta.

Notice the accidental C, Slat. Trinderena C. in upper Eden with dipping strongly west

35. At pond east of house is limestone with D. sculptata, multicosta & Pleurotomaria. Vein is exposed north of the pond, running NtS,

Heavy standing Sandstone

The rock on the east side of Bartle vein is the Tammount.
The rock with Dalmanella & Pleurotomaria is on west side of vein.
The bartle vein runs NtS, + contains considerable quantities of zinc blende, No galena was found.

Farther North, High bridge & the Bend are High bridge sandstones, west E of vein.
Near the bridge with Dalmanella and occurs west of same. Also a bed of shale and of sandstone.

36. Midway with Prasopora common.
At 540 NS & 5 west, exactly on L. with a few Prasopora occurs one foot exposed in the upper High bridge

B 35 Same as 34 but [illegible]

37 On the west side of the bridge the Springer rocks again and the High bridge. On both cases no trace of the Cincinnati is seen.

38. Gorge sinks left in Springer and a series of small ones on right.

39. Upper Fairmount. Cetlinkypodus layer, Hebertella occidentalis common. Cetlinkypodus typical. Plat. pondersa not common. Platystrophia small from Amsden. 815 ft if bridge level is 804 as shown on the bridge, but I notice the new map says 824, took up French map.

40. Rock resembling Tate layer for about 20 ft above bridge level. Plat. pondersa rare at base.

41. Upper Fairmount. Hebertella occidentalis. Plat pondersa. Cetlinkypodus in hillside north of road.

42. Tate layer sloping eastward gently.

28. Plat. layer. Heterosphorina rugosa. Probably above Tate horizon since the latter is exposed S.W. of the old pike valley.

43. Cryptolithus bibeni. Plat. pondersa. Hebertella occidentalis. Heterosphorina.

913 ft U.S.G.S. Covington by hand rubble blue l. Septamera rhomboidalis. Rhynchotrema dentata. Platy. Profile of cyclina gemmata Dalman. Platystrophia pondersa [illegible] upon the dentata + Septamera. 40 ft below level of road at lowest bend in road.

Covington by clayey rock. Covington by clay + thin layers of hard shaly sandy rock.

The level of the road cut where the house is 953 U.S.G.S.

44. At 911 U.S.G.S. and for 10 ft above Platystrophia pondersa very abundant. This passes over into the limestone and is underlaid by thin hard shaly layers. The anticline being still higher.

45. Same abundant Platystrophia pondersa layer with base at 935 and with top at least as higher as 955 U.S.G.S.

Stanford.

46. Margonille. Plat pondera in 2nd channel in an hill. Limestone. Quarry is about 10 ft deep, 970 U.S.G.S. reading obtained by using barometer. Has therefore subject to error.

47. Argillaceous rock. apparently with Plat. pondera but no good fossils.

48. At 894 about, U.S.G.S. Plat. pondera, Retetella wordentalis & the Retetella simata. Apparently also one Pleurotom. Upper end as Margonille.

49. Fairmont Quarry. Strophomena margonillensis abundant.

50. Fairmont. Strophomena margonillensis.

51. On summit S of 51. is Devonian chert, with Plat. lyrax mixed with chert at bottom though the Devonian here had rolled directly on the upper Margonille.

North of 51, is typical Eden with Plat. aurifonte common.
Dalmanella - common only in the four layers, rare elsewhere.
Strophomena [illegible] well, Rafinesquina [illegible] abundant.
Eden [illegible] about 50 ft.
Travel [illegible] Eden & Dalmanella formation E & W, or [illegible] by SW.

52. Eden with 2 specimens of Primolens, also Plat aurifonte & Dalmanella.
Rather numerous limestones on both sides of the road.

53. Top of High Bridge into Vanuxem in dark at top, also Cetoni large specimens. Dipset to the lower of Cincinnatian bed. Above this is the bottom part of the Cincinnatian, not well exposed.
At 885 is top of High Bridge, U.S.G.S.

54. High bridge top occurs at a curve here = 885 U.S.G.S. in woods along the road before reaching 54.

The limits seen at 54 branching nearly but the main vein is somewhat a little east of north, but not straight. A little piece there is associated with the limits.
The High Bridge & Lexington seem best to the vein. The country rock East by this vein was not exposed at time of visit.

55. Lexington L. quarry, with Rhynchotrema [illegible] rare Retetella [illegible] in.
Probably [illegible] of about 1000 ft [illegible] = 950 U.S.G.S.

56. High Bridge at least 95 ft above creek, not measured. Lexington [illegible]

57. A series of sinks in Lexington L. Creek
underground channel.

Danville

58 Lexington L. at Cove Springs =
outlet of underground stream

59. Winchester mill, complaint Pennsylvania
and other formations dry, no
but no Leptaena or Cyclonema
noticed.

60. Perryville tel. noticed by lower knobs
without any fossils I could recognize
except a Leptaena which higher
occurs in only like the knobs

61. Perryville tel not clear level. 861 H&S.

62-63. Limestones at the Museum.

64. Perryville Stone quarry
behind the knobs from

66 Richmond mill top sandstone
Rubbly, fossiliferous.
Trilobites
Bryozoa
Strophomena & Streptorhynchus

= Eden

65 Perryville = Winchester on top of hill?

67. Near Danville, [illegible]

68. Gratton Co.

69. Summit Stephen Co. Perryville
about [illegible] Bluegrass [illegible]

70. Stone quarry [illegible] Eastward
[illegible] = Not [illegible]

71. Summit summit of hill, Dorman
Short Chapman
Largest exposures on main Platy
Dolphia lynx. - Pendleton.
Apparently Decorah on Maysville
hill
Top of Maysville about 1000 H&S.

72. Shale so. apparently upper Bonnie
or Mt Hope
Apparently above Eng. knobs.
At least nr Bethlehem & Pleasanton
Apparently above Pleasanton

73. From 72 to 73 the Grattan so. chiefly
shaly but large boulders toward
top.

74. Going up hill toward 74 the
sand shaly but so. with large
boulders toward the top.

75-76. Eden with Dalmanella &
Strophomena. Does this dip
W under the Dorman?

76. The shaly exposures just beyond
are, along the road, the Eden
as measured to be Eden.

77. South end of dense hard rock with
crystalline masses resembling
Winchester.
Away from [illegible] Pennsylvania hill [illegible]
with [illegible] layers.
Further [illegible] Maysville knobs
[illegible]

154

78. Nehoiella tenuis common.
79. Nehoiella tenuis &
Rhynchotrema

80 Defile reaching last house on left.
Perry ville lst is exposed
At 80 is seen hard limestone with concretionary masses, and seems to be Mt Hebron.
Eden blocks here slipped down hill

81. A great Eden section could be made out S & along the road, and up the various hills.
The basal part of the Eden is very sandy and like the bedded Sandy, the middle and upper part have much redish brown shale in it.
Dalmanella & Platystrophia, Nucleospira tenuis & Edenia are filling and possibly has been worn down from the last Hope by the time the last part of Hydnoceras tuberculatum

59 One mile N of Rockland.

Leptaena & Heterosphragis in upper Lynx beds.

Dense blue limestone with gasteropods.
Shaly rock without fossils (10'-15'?)
15 ft Clayey. Plat. lynx.

3½ mi SW of Mitchellsburg. and ½ to 3/4 mi East of James White-house. & home of Sanford C McCarty.
Black shale
Devil. — 9½'
Ordovician Black.

3/4 mi East of last Bob Edwards West of house

Devil — 6 3/4'
Hard silicous flinty — 5'
Strong dip.

Junction of Mill Creek & Scott Fork
at Jordan Whitehouse, NE of house

Devil — 13'
Ord. — in edge
→ Trail Ord. — further down hill.

82. Plat. pondersa, Hebertella, abundant
Zaphrentis prolifera in considerable
[illegible] of fine grained, drab col-
ored limestone, Maysville upper.

83. Plat. pondersa in argillaceous
limestone, Maysville upper, up
to 950 level.

84. Plat. pondersa, Hebertella, on the
Zygospira Hebertella [illegible] Maysville
[illegible], in blue nodular limestone. The Plat. pondersa abundant
and in compact [illegible] the shale and
bring [illegible] fossils [illegible] Cincinnati.

85. Sandy Hollow. Probably Richmond.
Dark [illegible] creek bed. Up
for 50 ft in [illegible] alternating, about.

Climate [illegible] [illegible] of mud
Interval 89 ft, [illegible] dive
Second Dev. Strophomena, [illegible] clay rock, [illegible].
5+ Tetradium
5+ Columnaria vacuna
[illegible]
Platystrophia ponderosa,
This is the Columnaria [illegible]
of [illegible] Richmond.

Interval 4 ft [illegible] Maysville.
Limestone [illegible]

86. Dev. chert abundant, including
Phillipsastrea.
In stream bottom, rock lithologically like that at Columnaria
horizon.

87. Black shale well exposed, with great
quantities of Dev. chert below.

88. Thin edge of Black shale with Devonian
chert [illegible] below and Devonian
[illegible] above. The Devonian [illegible]
[illegible] in the Clinton.

89. Thin bedded rock (Richmond?) this far.

90. Fossils abundant, especially bryozoans
+ Platystrophia = Lower Richmond?
Blind clay rock weathering [illegible]
exposure [illegible] fossils,
Among them [illegible] Leptaena = Arduennia
Dev. [illegible] [illegible] like that
at loc. 82.

91.

Fossils [illegible] Maysville?
[illegible]
[illegible] within
[illegible] = 20 ft?
Maysville with Plat. pondersa.
Dev. [illegible] like loc. 82.

92 Clay shale or shaly rock.
½ ft Clay in the pyrgocrina = R. Richmond?
½ ft. limestone, thin with fossiliferous,
Fossiliferous clay rock ½ ft.
Platy pyrgocrina, fairly common. 2 ft.
Internal. Fossils in clay rock. 5 ft.
Septaria in place.
Internal 1 ft. fossils in clay rock.
Dove colored limestone 5½ ft.
Clay shale rock, 17 ft.

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93 Top of Dove colored limestone
Base of Underwood 946 U.S.G.S.
This gives 40 ft. of section of a
road cut. The upper Richmond
consists of shaley clay rock.

94 Dove colored L. Maysville, rises nearly
the pike,

95 Dove colored and argillaceous limestone
at base of Maysville. Fossiliferous,

96. Argillaceous brownish Maysville
like Plenty of it in creek.

97. Top of hill. L R
35 ft shaly L. Lower
8 ft. with O. [illegible]
1 ft [illegible]
5 ft Dove colored [illegible]
50 ft shaly limestone [illegible]

98. = Continuation of 97.
35 ft. highest point of hill. = 2nd [illegible]
7 ft. top of heavy argil. with nodules below.
2 ft. heavy argil. bed.
27½ ft. Internal. Shaly L.
<R

Section viii.

43. 10 ft. Thin shale rock, [illegible]
10 ft [illegible] not exposed.
2 ft. Septaria. Rhy. dentata exposed
S — 5½ Dove colored gastropoda.
16 ft. shale rock [illegible]
6 ft Siliceous rock. Pr. parvus in abundance
7 ft Siliceous L. Partly dove colored.
Platy pyrgocrina

Platy Pyrgocrina large with
[illegible] up to 8 ft above base S.
Dove colored brachiopoda
from 2½ ft below up.

Second large Cyclocrinus. Pyrgocrina
occurred 2 ft. in second bed
[illegible] with [illegible]
[illegible] Septaria. [illegible]
[illegible] Dove
[illegible] fossils
[illegible]

Section continued

99. The Arachnoidea fossil bed is [illegible] above Black Creek level.
[illegible] ft. to top of hill.
15 ft. [illegible] Plant fragments [illegible]
16 ft. Solid [illegible] to top of [illegible]
[illegible]

According to calculation of the surveyors [illegible] 21 + 29 = 50 + 920 = 970 ft U.S.G.S.

84 ft. (and 101) At this locality Pecten jenkinsi is abundant up to 965 ft U.S.G.S. and from this point down to 91 ft (955 USGS) The rock looks like the Richmond bryozoan. The heavy fossil zones come in at level of Nine Mile Creek. Neither Pecten nor the Plant fragments are of subordinate types.

100. Massive blue limestone Maysville Upper
101. 2 ft. Bryozoans abundant. Richmond Lower
5 ft. Pecten jenkinsi Tan and buff
6½ ft. Shale, Phynch. dentata base < 944 USGS
4 ft. Solid limestone,
16½ ft. Shale zone.
8 ft. Plant fragments are abundant, Mt Auburn
18. Mt Auburn. < 916 USGS.
Creek level.

102. Spring S in the road from Silent Creek to Mt Auburn is a cross section. The weathering shale + solid limestone have been exposed for a quarter of a mile. Near Cross the Richmond bryozoan occurs 4 inches above base, a little [illegible] in size. It ranges up to 2 ft above the base. Pecten jenkinsi occurs [illegible]. This is marked by the layer from clay with [illegible] bryozoans at base of Upper Richmond.
Several loose [illegible] vacuum [illegible] on hill side.

The base of the Arachnoidea fossils here is 920 ft U.S.G.S. [illegible] along road about 40 rods east as accurately as the instrument permits.

Up to 40 ft above Richmond base the rock is [illegible] and no [illegible] is found in situ.

103. Bodhen Creek.

[illegible]

Left at Arrowhead [illegible]

[illegible] (9-1-10) - 932 ft. H.S.B.S.

[illegible]

[illegible]

[illegible]

104. [illegible] 860 ft. H.S.G.S.

[illegible]

[illegible] 738 H.S.B.S.

[illegible]

[illegible] at 901 H.S.B.S.

[illegible] copy of U.S. map.

105. [illegible]

Mt. [illegible] The section [illegible]

This would place the top of the Mt. Andrew at about 874. The Mt. Andrew is exposed but was not measured. The 1 mile of the Mt. Andrew Slat beds should be at about 866. The [illegible] section was not measured but probably is near

Between Rows 10 and 11 and numbers N of Rowland the creek is at 849 ft. H.S.B.S.

The exposure in the bank cliffs and northward along the road includes only about [illegible].

10. The cliff at 10 consists of [illegible] clay rock, [illegible] exposed, containing Hind Lepidocaris [illegible] in about 6 in., and [illegible] fossiliferous [illegible] in [illegible] layer containing Lepidocaris.

This places the top of the Andrew bed at 848 ft. H.S.B.S.

The old [illegible] at 10, near the road, is [illegible] by the top of the Andrew.

North of the house N of 10, the hard brown [illegible] below the Andrew is exposed up to 7 ft. above the creek.

The [illegible] of the Andrew is only the usual few fossiliferous layers.

9) [illegible] [illegible] [illegible] [illegible]
Hase not definitely [illegible]
9 ft [illegible], clay, [illegible] abundant.
5 ft [illegible] argillaceous [illegible] [illegible]
5½ ft [illegible] [illegible] [illegible], [illegible]
[illegible]

106. [illegible] Anticline [illegible] [illegible] [illegible] runs NE. This [illegible] [illegible] [illegible] of the R.R.

107. East of R.R. ~~Leptaena~~ [illegible] [illegible] At track level, about 20 ft up to Columnaris [illegible] [illegible] [illegible] [illegible] NE. Richmond

108

15 ft Interval [illegible] [illegible]
2 ft Interval with few Columnaris at top
64 ft Columnaris, large [illegible] top of Ambonia bed as far as D
[illegible] [illegible] from exposure [illegible] shale. This [illegible] not taken into account the [illegible] [illegible] distance is [illegible] [illegible] [illegible] 200 [illegible], Columnaria [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] crumpling up in weathering.

109. From the creek up to road crossing westward at 109, the base of the Platy. [illegible] Mt Auburn is 103 feet below the road crossing. This = 950 - 103 = 847
The [illegible] may be [illegible] 862 while the [illegible] will [illegible] along the road for at least ¼ mile.

110 In town (Lancaster) is exposure of shale, about 5 feet thick, very richly fossiliferous Ambonia, below which is drab colored [illegible] Ambonia bed avg = 1000 USGS

111. Road level in sag between two low rises or "hills".
Interval 5½ ft. basal part light blue, full of bryozoans = base of Richmond. Upper part = shale, belonging to Richmond.
Below this is richly fossiliferous zone = Ambonia with Plat. [illegible] in a [illegible] Columnaris and with few Leptaena.
Below this is drab colored limestone.
Below this is shale zone.
The Mt Auburn is not exposed here

112. Formation 45 down to bridge. The Conyville is represented by dark brown and argillaceous limestones with very few fossils, from the base of the section to the water is mostly shale.

Massive argil. limestone
5½ ft. Interval unknown
(16½ ft. shale bed) Bridge level 828 U.S.G.S.
4 ft. Interval
5½ ft. Shale layers + harder ends.
1½ ft. Fossiliferous. < 817 USGS
5½ ft. Argillaceous limestone
15 ft. Interval. Covered space.
Road level.

113. A good argillaceous limestone exposure about 11 feet below road level at road angle. Top at 885 USGS, not from zone visible

109. Road cuts 957 partially, USGS.
56 ft including fault at base.
Reference, road level < 901 USGS
5 ft drab colored limestone.

7 ft shale bed.
878 > 8½ ft. [illegible]
16½ ft. [illegible]
5½ ft. shales. Oates
Creek.

114. Church level top of hill Frogtown
27½ ft interval.
Base of silty fossiliferous strata with Platyceras conoideum, not Subumbonatum. Underlain by Conyville section.
Base of not Atrypa beloit at 965 judging from contour lines rather a good method.

115. Quarry W of road, clay spalling work regarded as Lower half of Richmond.

116. Road level.
18 ft interval.
Reference
3 ft drab colored ft < 945 U.S. G.S.
2½ ft argillaceous shale (thinning)
6 ft Atrypa beloit. Pl. conoideum.
Conyville argil. limestone

117. 7 miles bringing from creek level, up 5 feet.
This is marked by a shale section, bringing unknown.
Limestone, up the hill, is strong tilted-mass, dipping S 10 E.

118 Road corner.
10 ft Surface
5 ft. Rolly pebbles and shale fragments.
Road bisected with shale fragments.
Chert-like drive collected, below indicates that the weathering from rock is not Autrim.

119.
Top of hill.
22 ft) in level
Base of exposed part Autrim
(The latter 6 feet is 5 ft thick and is [illegible] shale)
Plenty of Corylus, Aralia, Sassafras, Hazelle, down the hill.
The level part at the creek, is shaly, for a [illegible] sector.

Are [illegible] and [illegible] this
2nd [illegible] Shale [illegible]
Shaly [illegible] exposed
10 ft [illegible] the hill [illegible] exposed
50 ft [illegible] the.
22 ft shale < [illegible]
3 ft shale [illegible] seen

120. Chert nodules and quartz pebbles seen along roadside. Rarely they are found also in the soil. Did not take time to locate the matter up.

121. Orthoceras limbatum.

122. Orthoceras limbatum. Very large, small of large one not well exposed.

123.
77 ft [illegible] exposed to top of hill 1030 ft NS&E.
27½ ft shale [illegible] < 900 about
3 rolly [illegible]
13½ ft massive [illegible] < 884 NS&E
Orth. limbatum

124. S. M. Sponaugle's farm land, west of store at Hustle (= 981 corner)
Chert 10 ft below level of church
Dev. chert in large [illegible] below
The [illegible] shale. [illegible] in the
The appearance are west of 2nd church
N of [illegible] road [illegible] on A S W
of [illegible] about [illegible] of road,

125. Exposures from near top of hill (within 20 feet) and here, are [illegible] [illegible] [illegible] with [illegible] [illegible] [illegible].
Here at 125 are some [illegible] [illegible] [illegible] [illegible].

126. Highest land carries base of [illegible] along road, with full section of Cynthiana [illegible] as far as locality 28 and thence eastward as far as the court house.

127 From Stanford to 127 frequent exposures of argillaceous rock resembling Richmond. At 127, a small outlier of Clinton, only a few yards across, beyond which southward is Richmond again. Half a mile N. West Creek [illegible] the [illegible] [illegible] comes in and continues as far as the church. No fossils to identify the Clinton, only lithological resemblance.

128. At this locality there is some [illegible] [illegible] which lithologically resembles the Clinton. Richmond exposures occur [illegible], but no exposures of [illegible] [illegible] [illegible] [illegible] which [illegible] [illegible] [illegible] considerable distance.

129. At this locality there is abundant Richmond rock along the railroad and thence eastward along the road up the hill.
Along the creek, west of 129, however, Maysville rock with Plat. ponderosa is exposed, dipping strongly down creek, northward, and less strongly eastward. This probably is only a local dip, but it will cause the strata to rise rapidly southward. Between these two localities the Arnheim should show up, but was not seen. The southward dip evidently will carry the Maysville beneath creek level within 200 yards of the bridge.

From locality 129, go south one mile and take road east to Maywood. Along this road the rocks, Richmond, dip strongly west.

Going from Maywood south, a rock like that [illegible] [illegible] [illegible] [illegible] like Clinton [illegible] at angle in road 1/8 mile south of Maywood, undoubtedly [illegible] [illegible] [illegible].
Some [illegible] [illegible] [illegible] occur in the [illegible] and half a mile south of Maywood.

A short distance farther south, south of the farm of Will Roberts, there is a fault crossing the road leading down the Black Shale in the south side. There is a little vein of dark marl and shale lying in the Devonian shale.

Within a very short distance the old crab orchard road is struck. From this place eastward, there is a school house at the point where the crab orchard road turns off sharply southward. On the road, in fact, passes from the gate at the school and follows down the creek eastward, taking but Richmond sandstone for almost the road.

Going eastward down the creek we reach Lower Shale, and just W of the bridge a little more than a mile east of Maywood, the blue clay below the Richmond is exposed with the Slat. Sandstone of the upper Devonian unconformably beneath. The Devonian strata are here soft above the creek east of the bridge.

Fault runs N 40 E. On N side of the fault is Richmond rock. On S side is Devonian, top of Devonian with Slat. Sandstone and shale rock above. This is uncertain because since our Geological was found.

On second examination I find it that the Devonian here is overlaid by shale, Richmond and unconformably by shale red, Slat, [illegible] called Devonian. This bluish shale is [illegible] and [illegible] of Maywood.

East of Maywood, 125, on top of hill, is Devonian [illegible] dip [illegible] Clinton [illegible]

So called Clinton = 97 ft above RR and same distance above Hampville tipple recognizing that it is not Clinton.

130. At this point from Stanford
only Richmond shale and limestone
folded & appearing along rock ledge
alongside. At 130 Lejeunia occurs
in most part of Ambrosia, farther
west the Black shale is in the
upper part of the Ambrosia comes
in and above this is the Richmond
proper, forms blue clay forming
the base of the Richmond; Bry-
zoans plenty. The rock dips rapidly
to west and, but is misleading
because of slide, Richmond. The
last wave dip should be noted.
Farther west, the rock must be
nearly level and at. The Pseudo-
Cincinnati shows up along the highest
point of the road. Then Richmond
rocks appear again westward.
The Ambrosia exposure evidently is
restricted to a small area along the
rock at 130.

131 At 131 suddenly the Black shale
comes in. Probably due to faulting.

132. Chert with Cumbrocrinus undulata,
evidently from Dev. l. formerly in
situ here. No zone chert but
Am. procerus, Cumbrocrinus & corals
also at the bluffs northward. The
zone chert is exposed a-bluff at
at the road junction. No 133. These
three localities are at about the
same elevation and the muddy-

ing Richmond exposed at several
localities evidently belongs to
the Devonian limestone in the
faulting, and the Dev. black
shale which shows up from 131 to
old number 51 and thence
westward shows up from 132
but only where the Devonian lime-
stone is exposed with no faulting.

133. Dev. chert with corals.

134. Dev. chert, lime & coral,
A. Clayey stuff with sponge spicules?
B. dark colored limestone. Plat from
shale rock.

A. This sponge I have seen several
times at base of Richmond Strata
east & north west of Portland.
B. No Lejeunia seen. Assumed
to be Ambrosia at top owing to
shale rock below. It appears to
be a much
higher mass of dark colored
rock than Lejeunia, while the
Ambrosia part appears to be-
come thinner.

27 ft in all between Clay
at top with sponge spicules and
shale rock below. The upper 5
feet of this interval is clay.
The lower 22 seems darker stone
or more clay.

130. Ambrotella [illegible] in Dev. Shale, overlying Argillaceous [illegible] which may be upper [illegible], whether any [illegible] and [illegible] I cannot [illegible]. Judging from section 135, only the [illegible] Richmond could be [illegible].

136 Apparently 60 ft of Upper Magnesian rock with 7 to 9 ft Lower at the base. It should not be connected in [illegible] in Dev. I do not know the rock, apparently [illegible] Richmond [illegible]. Its chief features are large granularity of its [illegible] rock, [illegible], and the small quantity of dove colored limestone in this Magnesian section.

The shale could be [illegible] with the section from 136 almost as far as 233 [illegible]

233 Old number
{ 17 ft Hamilton Dev. shale [illegible]
{ 8 ft Richmond [illegible] Magnesian
11 ft interval
4 ft Shawangunk [illegible] with Oneida [illegible]
25 ft [illegible]
21 ft dove colored [illegible] Richmond [illegible]
at the base [illegible]
A great fault must have let the Black shale down in [illegible] this locality.

[illegible] N. 45 E. [illegible] with the clay, [illegible] dove red [illegible] the red on [illegible] and the Dev. [illegible] with [illegible] fault. The Black shale [illegible] Dev. [illegible] the Devonian [illegible] represented only by clay, [illegible]

The Magnesian represented here is the Lower Magnesian, attenuated to 5 ft. [illegible] The Black shale differs with [illegible] here. The fault line runs across creek but N of the road, [illegible] about 100 yds and same distance S of [illegible] in the creek, [illegible] road [illegible].

130. Second [illegible]. The Magnesian occurs in the dove colored limestone immediately beneath the Lower Magnesian. See section 135 [illegible] represents about the same thing.

About 35 feet of Richmond underlies the soft fossiliferous Richmond shale at this locality.

One mile S of 233, where road turns West to Grand Tumersville. Coming down the hill at the turn of the road, the Beaver section is marked with Devonian chert in red soil, and this by a shaly zone. Nearer the bottom of the hill, the Maysville limestone, judging from sections NE a bit, 9 assume it to be Maysville.

Half a mile west of this last locality, where a road from the south crosses in, Platt Rendersa occurs in the creek bed. This evidently is Maysville. The overlying part of the section also is assumed to be Maysville. The thin bedded stuff starting in about half way to Tumersville is assumed to be the Tate layer. It is important to note that the Corryville here does not consist of glauconitic limestone but of argillaceous limestone which lithologically resembles the Richmond. This might to some meaning geographically.

Devonian chert is common almost as far as Tumersville.

137. Creek bottom. Black Shale probably SE of this locality. Black shale was exposed in bottom, near Dev. limest. in the sing road depression, if not a fault. Then the Dev. limest. should be. Contacts seems to 133, l.c.

138. A circum back of house exposed on hill, l. = Corryville probably. 44 ft down is blue l. nubble with Strophomena. Between there should occur the Arthrophycus but it was not seen. Exposure not sufficient and dangerous to dig around as slope the hole rises steeply since 137 or whether there is a fault here.

139. Below entrance to house on south is Strophomena, Maysvillensis, and near foot of hill probably is Mt Hope, and this continues to be exposed westward as far as Hanging Rock.

140. Exposure point the stone fences contain Strophomena maysvillensis, and good exposures seen directly west of house are good exposures with Strophomena maysvillensis, Mt Hope, etc.
These exposures continue west to fork of pike.

141. Exposures with Strophomena maysvillensis,

142. [illegible] fossiliferous l. [illegible] with Sluiff. magnificent [illegible] Bridge [illegible] Cyclocrinus [illegible] Cyclocrinus [illegible] Cyclocrinus [illegible] and above at about 955 & 960 U.S.G.S.

143. Dev. shale + land is high [illegible] Corryville but see [illegible] exposures of the Delta.

144. Dev. shale abundant + [illegible] tree [illegible] 1062 [illegible] Corryville.

145 Black shale.

146. [illegible] Corryville. Duffin Layer over grey Devonian [illegible] as [illegible] 1099.

147. Devonian flat [illegible] at 134 [illegible] shale [illegible] Plat [illegible] & [illegible]

148. Duffin exposures at about 99 U.S.G.S. with Black shale & [illegible].

149. Spur 149 is Duffin layer over grey Dev. l. with [illegible].

Here is Duffin layer
Bryo l. with [illegible]
3 ft dove colored l.
8 ft sandy weathered stuff full of Plat. [illegible]
and some fish shells
but not a rich bryozoan bryozoa,
only a few are found.

151. Spur [illegible] City
Hermian limestone see
[illegible] 220
Interval about 10 ft or less.
5 ft Argill. shale [illegible]
3 ft. Hamilton Common at top
large [illegible] at base
Cyllotoa. Stone cut SE of
Fairmount.
[illegible] of creek. Dev.

151 Duffin layer [illegible]
grey [illegible] Devonian
U.S. [illegible]

152. Dev. l. at [illegible] See [illegible] No. 217
Indian [illegible]
[illegible] = upper Corryville Plat
[illegible]
Upper Pla [illegible] Plat. [illegible]

153. [illegible] level to slightly [illegible]
[illegible] same [illegible] [illegible]
more fossils [illegible] with [illegible]
Cattaraugus [illegible] [illegible]
this should [illegible] [illegible]
top of [illegible] [illegible]. [illegible]
[illegible] [illegible] [illegible]
[illegible] up [illegible] [illegible]
[illegible] [illegible] [illegible]
at creek level at 152.

154 [illegible]

<R

22 ft [illegible]
[illegible] Coal [illegible] 194 but not
Cattaraugus [illegible] only [illegible] [illegible]
58 ft [illegible]
[illegible]
ridge [illegible] { [illegible]
15 ft
[illegible]

[illegible] [illegible] [illegible]
[illegible]
[illegible] on top of [illegible]
[illegible]
[illegible]
60 ft [illegible]
[illegible]

R>

~~155. Shaly below [illegible], [illegible]~~
~~[illegible]. = [illegible]~~
~~going down hill [illegible]~~
~~[illegible] presented~~
~~in [illegible] of [illegible].~~
~~Dip of the larger [illegible] exposed~~
~~[illegible] while [illegible]~~
~~apparently nearly E + W but~~
~~this is uncertain.~~

~~[illegible]~~
~~156. [illegible] chert fragments over~~
~~Banks [illegible]!~~

~~157 Black shale, First exposure going down creek.~~

~~158. [illegible] with [illegible]~~
~~[illegible] First exposure going~~
~~downstream. [illegible] base.~~

~~159 [illegible]. First exposure~~

160

Clinton formation.

5 ft. fined. as gray. [illegible]

No fossils [illegible] thing [illegible]

[illegible] turbines. [illegible] found

and [illegible] throughout.

[illegible] account

[illegible]

1 ft. Stone added [illegible] [illegible]

may be [illegible] R. [illegible] [illegible]

162 5 1/2 ft. massive dusty [illegible] Rockstaff

8 ft. bedded [illegible] [illegible]

7 1/2 ft. shaly stuff 6 ft. sandy [illegible]

2 ft. drab [illegible]

2 ft. shaly stuff with [illegible] [illegible]

8 ft. shaly stuff.

10 ft. Platt [illegible] [illegible]

Lefthand C. [illegible] [illegible] S.

5 ft. interval.

Chert [illegible] [illegible]

[illegible] sandy [illegible]

The sandy [illegible] [illegible]

[illegible] also [illegible] [illegible]

any [illegible] [illegible]

to [illegible]

Richmond.

161. Lefthand [illegible] [illegible]

163 Dove colored limestone in creek

bed from 161 to 163.

164. [illegible]

35 ft. Interval. Prairie [illegible]

[illegible]

27 ft. Interval, chiefly [illegible] [illegible]

alone. [illegible] [illegible]

13 ft. [illegible]

27 ft. creek bed

Section NE of spring. Up creek

from the Hard [illegible] [illegible] about

1/10 mile.

The [illegible] is in Scrub Grass

creek, about half way between Mill

branch and the road to Alleetin

which [illegible] further down the

creek.

165. Rollings is along [illegible] up North

Fork from mouth of Scrub Grass

Back: 3 ft. [illegible]

Dominant.

30 ft. interval

Lefthand [illegible]

33 ft. [illegible] [illegible]

50 ft. interval [illegible]

creek bed.

Up the Fork, [illegible] the lower

part of the preceding section

was [illegible]

Crinoids [illegible]

with the [illegible]

accompanies section 168, the
first coding section 167, pro-
bably of the shale. Blackwater
Formation, not the [redacted]

169. East Extension

170. Front Black Shale

South of Pondsville I found
Lithostrotion on the same formation
= St Louis. I don't place the
Kaskaskia St Louis – Black
Shale section.

167. [illegible] = 16 ft.
Clay, [illegible] 6 ft [illegible]
Sandy [illegible] Dem-
[illegible] well [illegible]
[illegible]
Shale [illegible]
[illegible] above

168 [illegible] < R
6 ft shale layer
1 ft shale [illegible]
[illegible]
5 ft [illegible]
1 ft [illegible] above
1 ft [illegible]
4 ½ ft [illegible]

[illegible] Dem-
[illegible]
6 ft [illegible]

R >

Dark layer above. a thin
[illegible]

A. [illegible]

B. About one mile beyond forks of Pike 1½ mi West of Pratt mills, on the middle fork, turned Conjunction station.

Dressed limestone.
10 ft dressed, with 7 foot-pace [illegible].
56 ft out to out.
10 ft angle, [illegible] Old stone bridge = wide [illegible].
At least it [illegible] the earlier (Shoemaker) [illegible] and the bridge [illegible] of Prattsville, Creek level [illegible].

The D&H [illegible] have been present at all expansions along the western boundary of the Adirondacks from Moreland to this point, west of Prattsville.

C. Where road turns off south 1 ¾ mi W of Prattsville.
Dressed limestone,
6 ft Dressed to
Shale bridge. See sections 24
[illegible]

About half a mile beyond the "Hardy Boundary" where a road turns off south, Old Lake Shore expands a little distance of flat land up to the present (since C) in doubt if under land of the Dominion time at me,

At the R R crossing, south of Moreland the D. & H. chert yields the residual dressed limestones at the top of the Onondaga section.

0	.90	1.55	5.40	.18	.72	.54
2	.90	1.55	5.40	.18	.72	.54
7	1.05	1.70	5.95	.21	.84	.63
12	1.20	1.85	5.70	.24	.96	.72
17	1.15	2.10	5.95	.23	.92	.69
22	1.50	2.45	6.30	.30	1.20	.90
27	1.52	2.47	6.32	.30	1.24	.98
32	1.90	2.55	6.40	.38	1.52	1.14
37	2.10	2.75	6.60	.42	1.68	1.26
42	2.20	2.85	6.70	.44	1.76	1.32
47	2.25	2.90	6.75	.45	1.80	1.35
52	2.32	2.95	6.80	.46	1.84	1.38
57	2.35	3.00	6.85	.47	1.88	1.41
7 < 60		3.22	7.07			
64	2.57	3.30	7.15	.51	2.04	1.53
69	2.65	3.47	7.32	.53	2.12	1.59
74	2.82	3.65	7.50	.56	2.24	1.68
79	3.00	3.95	7.80	.60	2.40	1.80
84	3.30	3.60	7.45	.66	2.64	1.98
89	2.95	3.45	7.30	.59	2.36	1.77
94	2.80	3.45	7.30	.56	2.24	1.68
99	2.70	2.77	6.62	.54	2.16	1.62
104	2.19	2.25	6.10	.43	1.72	1.29
109	1.70	2.10	5.95	.34	1.36	.95
114	1.45	1.85	5.70	.29	1.16	.87
119	1.20	1.55	5.40	.24	.96	.72
124	.90	1.25	5.10	.18	.72	.54
4 < 128	.60	1.15	5.00	.12	.48	.36
133	.50	.75	4.60	.10	.40	.30
138	.10	.55	4.40	.02	.08	.06
143	.05	.55	4.40	.01	.04	.03
12 < 144	.05			.01	.04	.03
		7.8		.15	.60	.45
		3.95				
		3.85		.2	.8	.6

178 Cardrille at 875 as well as can be made out from residual material and from earlier lines.

Grand Switch.

At mile 1 mi N of Grand Switch there is a bluff with layers from 15 to 20 ft. Probably the 100 ft bed, since the contacts are supposed to be massive, but it may be the 50 ft bed of the Sonyea, the distinguishing features not seen.

Stratigraphic relations seems between here and Hay Creek from Creek to Grand Switch.

179 Old country. Hardly half a mile N of Grand Switch at the forks of the road, the Genesee shales are seen, spalling into small fragments, with flat fronds as at 13 feet above the level in the bottom field. Prasopora and molluscan matter, a zone as S of Naples on Rolling.

Devonian limestone occurs a little distance above the level, but the S of Naples specially rich, more than 10 or 15 ft higher. Blocks on the stone.

About 1 mi S of Grand Switch where road crosses Creek, fine west dipping [illegible], Dev. l. only 1½ ft, clearly exposed. 25 ft interval.
Layer + Prasopora + nodules common.

Southward down Genesee, the drive entered Genesee Conesus at least 16 ft below the Prasopora layer. Possibly 18 more.

At North Hill nothing lower than middle Conquilla. Spring led below. Now below sec. Blackshale 5½ ft Devil. 66 ft in Devil.

Spalling argillaceous shale. } 33 ft
Nodules and Nodules massive.
Fossils expand in light & red fronds flat } 33 ft
argillaceous with [illegible] + [illegible].

E. Now same house. Led [illegible] 1 mi along road from North Fork, up hill, sixty [illegible] SE of 185?

6 ft Devonian L.
33 ft { spalling argillaceous. shaley layers.
nodules + Prasopora c.
18 ft non-fossiliferous
[illegible] c. base of fossiliferous 1 ft [illegible]
Devonian l.

E

[illegible]

F. [illegible] Maria Remington and offset Isaacs.

Dimensions.

3 3 ft [illegible]

2 ft [illegible]

4 ft [illegible]

4 ft [illegible]

6 ft [illegible]

[illegible]

6 ft

Lefferson:

Lane of Lefferson [illegible] not located for.

G. [illegible] from going [illegible] Jones Fork.

4 ft [illegible]

31 ft [illegible]

H. [illegible] of Lane of Carl Ray, [illegible] [illegible] Jones

4 ft [illegible]

3 ft [illegible]

14 ft [illegible]

6 ft [illegible]

[illegible]

[illegible]

[illegible] 3 in.

Rd Union, S.T. Rogers 1 mi E of [illegible] Jones Fork. On Jones Fork [illegible] [illegible] 2 miles E of Randolphville. From mouth of Jones Fork to [illegible] Walling creek is [illegible] [illegible]

See next page

5½ ft [illegible]

[illegible]

of [illegible]

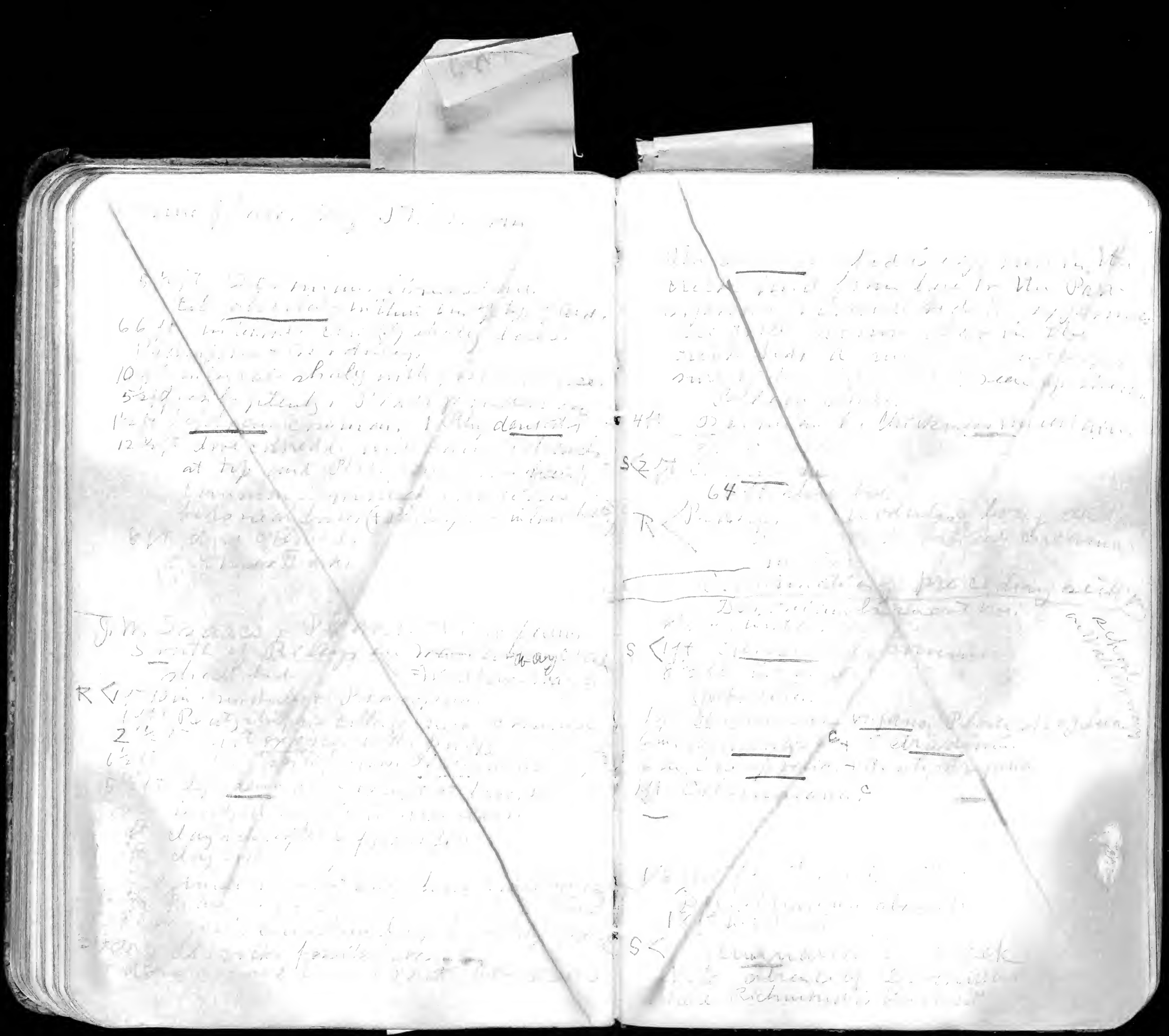
81 ft [illegible]

[illegible] C.

[illegible]

[illegible]

[illegible]



[illegible] 37 [illegible]

5 [illegible]
[illegible] within [illegible]
66 [illegible]
[illegible]
10 [illegible] shaly with [illegible]
5½ [illegible] plenty [illegible]
1½ [illegible] Cinnamon [illegible] dauntly
12½ [illegible]
at top and [illegible]
[illegible]
[illegible]
6 [illegible]
[illegible]

J. M. [illegible] farm
S [illegible] way [illegible]
[illegible]
R < [illegible]
1½ [illegible]
2½ [illegible]
6½ [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible] fossils [illegible]
[illegible]

[illegible] fed [illegible] the
[illegible] the [illegible]
[illegible]
[illegible] the
[illegible]
[illegible]
[illegible]
4 [illegible]
S < [illegible]
64 [illegible]
R < [illegible]
[illegible]
[illegible]
[illegible] preceding [illegible]
[illegible]
[illegible] Richmond
S < 1½ [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
[illegible]
1½ [illegible]
[illegible]
S < [illegible]
[illegible]
[illegible] Richmond [illegible]

J. Frank Hampton, 1½ mi SE of
B. Creek, Ark.
Black Shale.
4 ft Dipping Ledge
5 ft Gray clay, C. Dominica.
Black shale
3½ ft Jointed shale, weathers in layers
Leptaena tripe.

Lower edge of residual mass of limestone just
of Lower Mississippian shale left above
level of present bed.

One mile up little Sugar Fork
above the mouth thereof, on the
R. Rock Lake School, a large outcrop
of shale with few fossils
= Lower Carrollton, fossils in
shale lying up from the ledges, now
buried by debris and soil.

50 ft Dark colored C, top not seen,
3.0 ft shale under
creek level.

S of Mrs. Nan Purdom, where road
strikes Little Stone, 2 miles E of mouth.
Black shale.
2½ ft Sulphur. Range.
5½ Dark gray C. Crab, plants, moderate
20 ft shale bed.
N. dubiosa, Orthoceras, and Cummin 98 ft
2 ft smooth clay.
7½ ft Very dense C. & Pl. fragments.
1 ft Leptaena.
3 ft Fossiferous.
5 ft N. A. middle exposed. 79½ ft
Top of dark colored limestone.
25 ft dark colored C. 54½ ft
62½ ft shale, C. Carrollton +
parallel, part of Selected but
based part is not Hunt shale
creek bed. } 0 -8

= 126 ft from Hunt to Dominica
= 29½ ft from Leptaena to Dominica
126
794 ?
920 ft N 55° S. probably.
Inferred from dip and order in field
with confidence.

172. Pickens Chapel 1¼ mi E of Last,
Devonian. Shale + Mississippian
15 ft.
Leptaena zone.
77 ft. gate in [illegible] } 104 ft.
27 ft not exposed
5½ ft Dipping, Platy ledge, [illegible]
[illegible] Pl. fragments
15 ft. Some fragments more [illegible], but
no [illegible]

173

174.

175.

Black Shale

6 ft.

4 ft

6 ft spalding clay

3½ ft

3½ ft

40 ft

22 ft

176. Adam.

3½

7½ ft

Section at Dunfermline

for the lower part of the Devonian

and, but probably in the upper

17 ft 6 in. massive white bituminous

13 ft 6 in. Spalding clay and

6 in.

Section at Pitlochry

2 ft

19 ft. Of [illegible] hanging [illegible] with large branching [illegible] exposed [illegible] creek level.

177. [illegible] reaches creek level, 6 ft [illegible] exposure [illegible] 176.

178. Black Shale. [illegible] reaches creek level,

Small [illegible] to South Fork up creek again for slight distance up creek from 174. Here the Black Shale is [illegible] Orbicular Brick, Limestone [illegible] full of nodules 1-3 inches in length.

Contact Approximately ½ mi

Rocks along creek [illegible] exposure ½ mi E of Adam

Black shale

Devonian.

20½ ft

2 ft

=Powers, Ky.

See next page

9 ft

9 ft

9 ft

Black [illegible]

OMPani L. Powers P.O.
J. F. Allstott's store

18 ft
16½ ft
49½ ft
33 ft

12 ft
5 ft
39½ ft
5 ft
27½ ft
73½ above S
3 ft
14 ft
4 ft
9 ft
5½ ft
7½ ft
3 ft

The store is 7 mi East of mouth of Rush Branch.
3½ mi West of Elizabethtown.

One mile West of Powers, is
Here he [illegible] the [illegible] road
[illegible]
Falling Rock Branch
Black Lead
3 ft
11 ft
2½ ft
5½ ft
5½ ft

1½ mi. [illegible]

Clay, yellowish red, [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

NE [illegible] S. T. Hancock, 2 mi.

Powhatan, [illegible] 1½ mi.

[illegible]

38 ft [illegible]

50 ft [illegible]

[illegible]

13 ft [illegible]

4 ft [illegible]

18 ft [illegible]

22 ft [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

NW of school at Ellisburg.

R 6 in. Pennsylvania Large & abundant

5 ft. dark colored c.

5 ft. shale bed

11 ft. shale above, dark colored, compact

1 ft. N. dark colored c.

58 ft colored.

Black band

5 < 2 ft light colored blue, soft clay.

2 ft. [illegible] as in dark gray [illegible]

Evidently [illegible] as [illegible] & spotting clay and [illegible]

7 ft Black [illegible] excellent but not

2 ft. [illegible]

R Pennsylvania C.C.C.

[illegible] Varnum and [illegible]

Blue shale

2½ ft. Duffin's Ledge

2½ ft. Chery Dark limestone [illegible]

1 ft [illegible]

5 < light blue soft clay [illegible] set sections in Little South [illegible]

This leaves all [illegible] in the Williamsville [illegible]

Same strata [illegible]

This section should be used for Cumberland [illegible]

~~1 mi NE of [illegible], S. of [illegible]~~ Hafley
one mile [illegible]
2½ ft [illegible]
3 ft chert, [illegible]
30 ft [illegible]
13½ ft dove colored C.
34½ ft
[illegible]

1½ mi E of Elkinsburg, [illegible]
⅛ mi [illegible] of [illegible] Ellis.

Black shale.
1½ ft [illegible]
3½ ft Chert [illegible]
7½ ft shale bed.
2 ft dove colored.
7 ft shale bed [illegible]
[illegible]
shale bed [illegible]

S of [illegible], Stickle's [illegible]
[illegible] = [illegible] on [illegible]
3½ mi W of < [illegible], R
40 ft Black shale [illegible]
Devonian shale.
35 ft. [illegible] 15 ft [illegible]
1½ dove colored [illegible]
13 ft [illegible], cliff, [illegible]
[illegible]
3 ft [illegible]
[illegible]
1½ ft [illegible]
A

S < ft ss.
96½ ft [illegible] but no geodes.
30 ft [illegible]
33 ft [illegible] Kinderhook [illegible]
R> 33 ft [illegible]
25 ft [illegible] cherty [illegible]
33 ft chert [illegible]
5½ ft chert [illegible]
[illegible]
16½ ft l. + [illegible]
2 ft cherty l.
3 ft [illegible]
2 ft [illegible] cherty.
2 ft [illegible]
2 ft. [illegible] cherty.
3 ft [illegible]
1½ ft ss.
1 ft shale [illegible]
S <

Nr [illegible]
[illegible]

A 2 ft dove colored l.
softer [illegible] blue clay + rock
6 in. l. [illegible] C.
7½ ft [illegible]
[illegible]
12 ft. [illegible] dove colored l. =
[illegible]
> [illegible]
[illegible]
Large shale section
9 ft {[illegible]
[illegible]
[illegible] spring 2 mi [illegible]

Dam Sweeney's off Branch from [illegible]
Jackstown Hill, the upper [illegible]
[illegible] but [illegible]
no fossils seen,

At Smith's Hill the [illegible]
[illegible] to [illegible] level.

About 1 mile [illegible] the
[illegible] down [illegible]
[illegible] to [illegible] level.

= Anticline at [illegible]
Bradfordsville.

Saw mill 300 yds W. of [illegible]
at saw mill 1½ mi W of
Bowens and [illegible] E of Rush
Branch [illegible]
[illegible]
about 6 feet above [illegible].

Rush Branch is 1 mi W of
Marion-Casey Co. line.

7 mi from Rush Branch to
Bradfordsville.

Anticlinal [illegible] R. H.
Bateman's house half a mile
west of [illegible] on the
road to McKinney.

Chattanooga fauna.

Section ½ mi W of Rush
Branch [illegible]

Platystrophia
15½ ft. [illegible] Grey, limestone [illegible]
phosphatic [illegible] Do
[illegible]
dropped along the road.
A typical Sellersburg also,
[illegible] [illegible], [illegible] to
[illegible] of shale bed.
nodules [illegible]
3 ft [illegible] a few [illegible] fat top,
3 ft shale bed

shale bed
3 ft [illegible] rubble [illegible],
1 ft Leptaena b.
2 ft [illegible] c.c.
3 ft argill. rock. Fossils fair,

Water-lime, Pentamerus
Brownstone and conglomerate
3 [illegible] feet, just [illegible]
Rise of up Rock Branch, causes
Rock Branch [illegible] goes NE up branch.
[illegible]
[illegible] along the [illegible]
Ridge [illegible] 33 feet [illegible] shales
Short section. Very steep [illegible]
179. Outcrop from junction of the
branches, 68 on the Dry Branch. The 3 ft
[illegible]

180. Dark shale or argillaceous rock with
[illegible] Pentamerus
upper Meaux [illegible]

Geol. 81.

On this upper level [illegible]
[illegible] wider, [illegible]
[illegible] be ss.

[illegible] Partly covered [illegible]
36½ ft, [illegible] with brown [illegible]
85½ ft total, [illegible]

11½ ft reddish, at various intervals
Some of the layers 5 in thick.
Pleurotomaria, CC
[illegible]
5½ ft. Fine-grained arg. limestone, in
interbedded with fossiliferous layers.
P. [illegible] C Trimerus
Pl. [illegible] and [illegible] CC Calymene
bronteus, C, Dalmanitina
5½ ft. Thin [illegible] and blue red fossil
rocks. Pleurotomaria C, CC,
Trimerus. [illegible]
[illegible]
Tentaculite, crinoids [illegible], and fine
[illegible], P. [illegible]
5½ ft. Reddish [illegible] "sandy" layers [illegible]
[illegible] bronteus C.
Trimerus. [illegible]

2 ft [illegible] layers [illegible]
3½ ft [illegible]
[illegible]
[illegible]
5½ ft. [illegible] but sandy [illegible]
[illegible] C. [illegible]
[illegible]

4 ft. chiefly sandy arch.
1½ ft. reddish limestone,
Dab. multitude small, and
some individuals 3/4 in. in width.
= R Rhynchonella. Cyrtina.
Leptaena analoga. Pinnatrectus
Bryozoans. Orthis.
Bryozoans. No Pleotanchonotes
seen.
5½ ft. Sandy arch. Rh. Cyrtina in
chiefly sandy layers.
Gastropods. Nautilus. Cimolia.
Dolph. multitude of Cimolia
some tops. Rhynchonella.
Calymene. No Pleotanchonotes
seen.
3½ ft. Chiefly sandy layers.
Rhynchonella. Alga. also
numerous small flat specimens. Lophomeryx. spine not
rd. Orthis. Cimolia.
Brandy bryozoans.
Dalmanella very fine strias = Lonsdaleia
Rhyn. Middle Lder. Lim.
5½ ft. Chiefly sandy strata.
J rocks few. Rhynchonella.
Calymene. Bryozoans.
5½ ft. Chiefly sandy layers. J rocks few.
Rhynchonella. Lower 2 ft. red
in front.
5½ ft. Chiefly sandy layers. J rocks few.
Bryozoans. Dalmanella. Bryozoans.
S Rhynchonella. |

5½ ft. Sandy layers. fossils few.
Rhynchonella. Calymene.
1 ft red, at base.
5½ ft. Sandy layers. J rocks few.
One D. Dalmanella.
Rhynchonella. No Pleotanchonotes.
3 ft. Sandy arch. J rocks few.
Rhynchonella.
T all bone intervals between small, strong
16½ ft No fossils. west dip
Limestone. Coral fossil.
Rhynchonella. Possibly top of
Lyellia arc.
20 ft No fossils.
7½ ft Thin sandy arch.
11 ft Massive Grandaella arch

Blue shale. Rhynchonella with
Hebertella. Platyceras. Dalmanella.

Sec 191. Grand Sandstone, weak in
mill. Exact base not common.

18[illegible],
Excellent exposures of [illegible] boulders with top [illegible] [illegible] remaining [illegible], and un- [illegible].

= [illegible] in CL

11½ ft [illegible] [illegible], [illegible] several [illegible]

2¾ ft more [illegible] sandy [illegible]

11½ ft [illegible] [illegible] [illegible]. — like [illegible] a little

---

183. Top of hill + south slope and soil with Dalmanella [illegible] Hebertella [illegible] + quite a number of Rhynchotrema + Hebertella frankfortensis [illegible] Lexington [illegible] Lexington [illegible] some distance below.

---

184. Barren [illegible] with large masses of [illegible].
A. J. Hayden farm.
[illegible] north of E.
[illegible]
[illegible]
[illegible]
Lexington [illegible]
ecc

The [illegible]
[illegible]
[illegible]

Possibly only a slip of 10 to 30 feet.

---

185 — [illegible]
\ D[illegible] Cut,
6¾ ft D[illegible] layers.
5 ft [illegible] [illegible].
7 in.
2½ ft. [illegible] with
2 ft 3 in. [illegible] little chert,
2 ft 3 in.
? Middle [illegible] and Plat. ponderosa. [illegible] may be middle

---

186 — Massive [illegible] overlaying much larger section of thin bedded shale, [illegible]. Fossils absent except Bryozoa [illegible] thin calcareous layers.

---

187. Eden [illegible] + sandy layers Dal. multisecta, Rafinesquina. Bryozoa [illegible].

---

188 From this locality the Eden extends half way from 187 to 188. At 188, 100 yds [illegible] of the culvert over the creek, the [illegible] from 184 shows up again. It also shows up west of the [illegible] at 184.
[illegible] N of E. [illegible]
[illegible] Possibly
[illegible] Cynthiana has dropped [illegible]
[illegible]
[illegible]
[illegible] along

189. Inner, sandy shale. Edon partly dripped a little. No Cyathaxonia seen in basal is on south side of vein, as a rusty rock, in which Dentipal of seen at all.

190. Gamma. chiefly shale.

191. Streptelasma magnificum - Common.

192. Devonian chert. Very southward dip of upper part of Duffin Creek.

193. At lower base of Linnella, with Black shale down the road northward & southward.

---

194 South of Parkersville, top of hard.

Lithostrotion affinis, fine form. Lithostrotion polygonale, rare

20 ft. Fl. Lynn. basal part with Spirifer & Productus common.

11 ft. Sponge. full of fossils

<13 15 U S G S.

25 ft hummock with chert, [illegible]

2½ massive Rugose.

16½ covered

16½ ft hummock Rugose fully [illegible] small

8½ ft Massive Rugose with [illegible] small

22 ft Rugose with [illegible] hummock.

107½ Rugose, no chert

195

30 ft below level of Sponge. Rhipidomella dubia fauna is found in thin bedded cherty limestone. The cherty limestone has its base 35 feet below the Sponge, immediately above a very massive Rugose section. Part of section 194 this thickness was 25 feet but our account was taken of strong southerly dip where our [illegible] inclination

5 ft thin cherty l. mentioned above, massive [illegible] above.

13 ft } Sponge [illegible] below

5 ft limestone, very cherty below.

40 ft massive Rugose

3½ ft less massive Rugose.

90 ft Softer Rugose.

196 creek at base of section.
No exposure for long distance.

197 Linnella clay. Not seen.

198. Linnella clay at mouth of creek. Black shale on hard [illegible] down North. Often [illegible] Parkersville [illegible] must be about at level of top of Black Shale

---

199 Linnella clay at base of [illegible]

R } [illegible] ridge.

32 ft chert and hummocks [illegible] plenty.

38½ ft exposures, Rubble like [illegible]

77 ft Rugose, [illegible]

47 ft softer Rugose

44 ft [illegible] Rugose ?

[illegible]

Catholic church.
30 ft. Interval.
Silurian cylindricals
20 ft with oolitic chert.
R>

200. Nothing certain except Harrisburg chert since 199. At this last locality - 200 - Stringocephalus and other Harrisburg fossils are found.

201. Attica bed. 5 ft. fully fossil. gray, sandy appearance.
33 ft up is St Genevieve with Syringopora & Archaeocidaris spines.
11 ft up with St Genevieve lithographic limestone.
2 ft. Very abundant quartz pebbles 1 - 1½ in. diameter.
Top of section.

202. Massive l. like Stringocephalus bed, apparently, judging from blocks along the road, with Attica like material directly beneath.  crinoid, at road junction.

203. Limestone, Stringocephalus in the underlaid by at least one layer with fossils  crinoid

204. Top of knob, large conglomerate divides pennsylvanian.
41 ft interval, with surface covered by compact chert.
6 ft sand, yellowish brown + some white.
16½ ft not exposed.
One house St Genevieve block at top.

1435 USGS according to Jones.
15 ft interval. St Genevieve chert and some shaly limestone.
Top of massive l. such as would be the Stringocephalus ledge, vertical.
This massive l. is part of Attica bed and not the Stringocephalus ledge.

205. The rock appears in place and sound. The Attica l. exposed before reaching the house, and then nothing but Harrisburg chert is seen.

Further south, the rock stratigraphically is the Stringocephalus ledge.

206 Good fossil Hindostanella locality [illegible]

207 Top of Black Shale is 3 feet above creek crossing.

208 Black shale at 1100 ft USGS.

209. Black Shale top at about 1100 ft B.S.S. judging from Cincinnati lines

210. Black Shale top somewhat over 1070. Probably close to this number.

211. Black Shale top somewhere near 1100, probably very close, since it at least holds this level, but is found some feet across creek westward, probably R.R.

212. Eden at Smith's Cove of hill. Dalmanella abundant.

213. Eden. Paracyclas multicostata + Trinucleus

214. Eden Dalmanella and Trinucleus

215 Side resembling Bellevue. Not in Perryville.

---

as Cyathocrinus?

15 ft fine grained glauconitic sandstone

4 ft Dimerocrinites C.

Inferior mass.

4 ft. Perryville top. Fossils Trinucleus, Paracyclas, Dalmanella, Plagiorhynchus + Hebertella. Fossils from Glenwood. Part of this rubble from Glenwood.

216.

base of Perryville bed.

mostly, with Bitholithus + other fossils

R 12 ft fine grained Trenton limestone, 25 ft, in thick beds, with not fossils. Gray, medium grained. l. Several Rhynchotrema.

R = Prob. it contains Rhynchotrema & and H. frankfortensis also.

H. Murrayana is Rhynchotrema

217

5½ ft massive, full of bryozoans, Dalmanella not multicostata

6½ ft Shale, sandy, bryozoans

8½ ft massive rock.

1½ ft Dimerocrinites C.

1 ft 2 in. Stropheodonta perplana C. Plagiorhynchus

Plagiorhynchus C. Stropheodonta

6 in. Vacuum.

9 in. Rhynchotrema, Hebertella, frankfortensis

4 in. Bitholithus matutanum Platystrophia

3½ ft Perryville bed.

Creek bed.

218. Dimerocrinites

not exact, not measured

5 ft Perryville. Trenton not seen.

Creek.

219 Same as

220 Stropheodonta perplana not Platystrophia

Perryville

Perryville.

221. Atrypa sp. [illegible]
Brenopora? Abundant
[illegible] on weathered surfaces.
222. Top of Black Shale about
1100 ft USGS quadrangle [illegible]
[illegible] levels.

80. Perry Mills bed exposed overlain
by rock containing H. [illegible]
[illegible]. This could be found
at 217, that Perry Mills bed belongs
to the Hamilton [illegible].
223. Harrodsburg about to cap of hill

224. From 223 to 224 only Harrodsburg is seen on top of hills,
from about 1300 up. At 224
there is a little [illegible] attention
limestone, 4 feet thick, with Plu-
[illegible] Eng. [illegible]
225. St. Louis in place, at very
crest of hill = 3 ft.
Rock [illegible] pebbles.
226. The Cathedral beds well exposed
along the N. Road near the cross
junction, N. of 1275.
11½ ft. Alternation [illegible]
[illegible] limestones [illegible]
large [illegible] [illegible]
[illegible]
9½ ft. [illegible] Harrodsburg [illegible]
[illegible]
[illegible]
[illegible]
6 ft. Harrodsburg [illegible]

15 ft. Harrodsburg limestone half
weathered sandy.
2 ft. Chert. Massive.
16 ft. Bartlettsville, very massive.
20 ft. Nodulifer no. Bartlettsville
42 ft. Rockford one
16 ft.
[illegible]

Harrodsburg l. here has good
fossils and [illegible], Mt
Sibi [illegible].

Top of Black Shale about 8 ft
below top of [illegible]

227. Base of Smithville Chert 1020
accurate USGS.
228 - Fine grained St. Louis l.
15 ft. [illegible] of sandy l. weathering [illegible] St. Louis.
1250 USGS 15 ft. [illegible] alternation
Harrodsburg l.

Rock [illegible] chert [illegible] pebbles
and [illegible].

76-77.
[illegible]

[illegible]
[illegible]
35 ft. [illegible]
19 ft. [illegible] sandy [illegible]
22 ft. [illegible]

[illegible] 6 in limestone [illegible],
5½ ft. Eden, chiefly clay [illegible] bryozoa
3 ft. limestone [illegible] Cynthiana
8½ ft. limestone, full of bryozoans
2 ft + [illegible]
[illegible] with [illegible]
9 ft [illegible]
7½ ft [illegible]
[illegible]
Perryville [illegible]
49½ ft Paris bed. Mostly limestone [illegible]
creek.

East [illegible] the rock [illegible]
or [illegible] is not seen
even at the [illegible]
hill [illegible] as [illegible]
[illegible]

There is [illegible] limestone
[illegible]
[illegible] the [illegible]
[illegible]

56 — Bridge level 821 USGS
Base of [illegible] = 842 ft.

229. J. T. Sandidge,
Barite vein, lead a very little
zinc at 2 mile [illegible] Run N+
S [illegible]
Three [illegible] the
rock has the same con-
[illegible]
[illegible]
con-
[illegible]
[illegible]
of [illegible] 900 – 950 [illegible]

230 Ballard sandstone

231. Harrodsburg.
Trinucleus Prasopora [illegible]
4 ft. red [illegible] mollusks.
clay shale
12 ft [illegible] and arg. l. + [illegible]
6½ ft Limestone + clay shale
12 ft Limestone, [illegible]
[illegible] Cynthiana [illegible]
7 ft. argillaceous [illegible] with scattered nodular masses of [illegible], Zygospira,
Lingula [illegible]
2 ft. Strophomena [illegible] Rhynchotrema,
1 ft [illegible]
2 ft [illegible]
Hebertella [illegible]
[illegible]
Perryville bed.

The Perryville [illegible]
for [illegible] VII from the
cut.

232 [illegible] the R R
the [illegible] are
[illegible] by the Cynthiana [illegible]
[illegible]

233. [illegible] of the [illegible], the
[illegible]
[illegible]
large Cynthiana [illegible] with
[illegible] Zygospira
[illegible]

234. From 233 the rock dipps
[illegible] a gentle angle. At first
the rock is [illegible]
[illegible]
[illegible] per [illegible]
Then for a very long distance,
the rock is [illegible] of [illegible]
[illegible] very [illegible]
[illegible] stretch
at the [illegible] 234
[illegible] thinned out
[illegible] and [illegible] grounds
[illegible] very [illegible]
in [illegible] of the clay layers
235 [illegible] [illegible] OR
level,
236 [illegible]
[illegible]
[illegible]
237. [illegible]
238 [illegible]
239. [illegible]
240 [illegible]
241 [illegible]
242 [illegible]
243. Dracopora
244. [illegible]
Hayniana Lophospira medialis.
Hormotoma Salteri.
245 [illegible]
[illegible] 236
and 244
Clathrodictyon

[illegible] 4mi [illegible]
[illegible] clay with bryozoans
[illegible] rock.
[illegible] with Tetradia [illegible]
[illegible]
[illegible] top.
[illegible] Pl. [illegible]
clay rock with fossils.
[illegible] arch, [illegible]
[illegible]
[illegible] layers.
[illegible]
[illegible] layer.
[illegible]
[illegible] rock
[illegible] bed
[illegible] IV.
[illegible] clay the OR
[illegible] rock bed.

The road leading from the
[illegible] small [illegible]
[illegible] Tetradia [illegible]
[illegible] Also the [illegible] Pl.
[illegible]
[illegible] along the road. This
section should be studied and
measured.

Bodleiana

234. From 233 the rock angles
[illegible] a right angle. At first
the [illegible]
[illegible]
[illegible] very [illegible] sand,
the upper [illegible] [illegible]
[illegible] layers, and
[illegible] 234
[illegible] at
[illegible] thin [illegible]
[illegible] sandy
layers [illegible] layers
in [illegible] of the clay layers
235. [illegible]
[illegible]
236. [illegible]
[illegible]
237. [illegible]
238. [illegible]
239. [illegible]
240 [illegible]
241 [illegible]
242 [illegible]
243. Drasopora
244. [illegible]
245. [illegible]
[illegible] 235
and 244

Haymiana Lophospira medialis.
Holmotoma salteri.

Clay [illegible]

246. [illegible]
247. N of [illegible] 4 mi N of [illegible]
R 2 ft black [illegible] fossils
2 in black clay with Lophospira
1 ft white shale.
{ half
2½ ft { clay shale, with [illegible] [illegible] in [illegible]
6 in black shale
Inward tip,
weathering [illegible] [illegible] [illegible]
6 ft 6 in, clay shale with fossils.
4 in fossiliferous argillaceous, [illegible]
3 in clay shale
1½ in [illegible] layer,
7 in [illegible]
12 in [illegible] black shale, [illegible]
3 in shale
6 in [illegible] layer.
4 in [illegible]
1½ in shale
6 in [illegible]
5 ft [illegible]
base [illegible]
Flat [illegible] [illegible] IV.
along the [illegible]

R > Inner [illegible] on a shale bed

248. Along the road leading from the
[illegible] to [illegible] locality
[illegible] the Sandstone [illegible]
well exposed. Also the [illegible] Red
marls [illegible] [illegible]
vagans [illegible]
but [illegible] along the road. This
section should be studied more
accurately.

Merritts ferry, results of Red River
< Chistum ft.
32 ft blueish clay.
24 ft sandy l. & silt. fossils common
bryozoa but not identifiable except Fenestella
occasional no deposition. Stony layer
5½ ft harder sandy l. ledges.
6 in. hard sandy l.
26 ft [illegible] sandy l. & silt.
Fenestella. Fatcelina. Crinoids. varia.
14 ft { Sandy [illegible]
Fatcelina
16 ft [illegible] fossils

Sandy [illegible]
Chistum.
9 ft [illegible]
1 ft { Hard [illegible]
Fenestella
49 ft [illegible] Tr. 3 ft [illegible]
[illegible]
S < 1½ ft Hard l. [illegible]
1½ ft [illegible]
2 ft [illegible]
[illegible]
Drum [illegible] 180 ft

S < 1 ft [illegible]
6 ft [illegible]
6 in [illegible]
1 ft [illegible]
8 ft [illegible]
2½ ft [illegible] River

[illegible] Ferry, Revised section
[illegible] effervesce
[illegible] light blue clay
[illegible] sandy clay
[illegible] bryozoa. Pen.
[illegible] sandy l. + bryozoans Fenestella
[illegible] harder sandy l.
[illegible] sandy, silty l.
[illegible] Fatcelina. Crinoids
[illegible] 3 feet sandy layer + bryozoans
[illegible] without fossils. Stony layer
[illegible] shaly rock. Iowa Richmond
[illegible] blue clay.
[illegible] l.
[illegible] red
Fatcelina. Crinoids.
[illegible]
[illegible] Lepas.
[illegible] Fenestella at
base.
[illegible] derived. 14 ft above
river.
[illegible] from [illegible]. gastrop
[illegible] layer.
[illegible]
[illegible] river, below mouth of
Red River.

Missing

Merritts ferry, second bank of Rockaway.
< Chisolm pt.
32 ft blueish clay.
24 ft sandy l. siltier, smooth common
bryozoan not [illegible] except [illegible]
[illegible] no degression. Slaty shaly
5½ ft harder sandy l. ledges.
6 in. hard sandy l.
26 ft mixed sandy l. softer.
Tetradium, Tetradium columnare varia.
1 ft { Slaty, [illegible]
{ Hetetelas
16 ft [illegible]

Same bed as
Chisolm,
9 ft [illegible]
1 ft { Hard [illegible]
{ Tetradium
49 ft shale bed. Tr. 3 ft [illegible]
S < 1½ ft Hard l. [illegible]
1½ ft [illegible]
[illegible]
[illegible]
Down the river 180 yds

S < 1 ft [illegible]
6 ft [illegible]
6 in Tetradium columnare
1 ft [illegible]
8 ft Slat [illegible] dentata
2½ ft [illegible] rhombifera

Merritts Ferry, Revised section
Chisolm exposure
27 ft light blue clay
5 ft brownish clay
Slaty shaly, 0 m.
25 ft siltier sandy l. + bryozoans Hetetelas
6 ft harder sandy l.
26 ft, sandy, siltier l.
varia, 1 specimen.
1 ft { Tetradium, Tetradium, Columnare
3 ft [illegible] sandy layer + bryozoans
Hetetelas without [illegible] Slaty shaly
45 ft shaly rock from Richmond
1 ft light blue clay.
S < 1 ft massive l.
6 ft shale bed.
½ ft Tetradium columnare.
1 ft shaly [illegible]
8 ft Slat [illegible] dentata
[illegible] rhombifera et
base.
Slaty [illegible] dentata 1 ft above
base.
½ ft Hard [illegible] gastropod layer.
2 ft Covered.
by river below with of
Red [illegible]

College Hill. East of Tunnel.

T believed to be Lyrometopus
Calamopora [illegible]
Microsolen

Clinton.

38 ft. Light [illegible] clay
20 ft. [illegible]
[illegible]
T > 28 ft. [illegible]
22 ft. [illegible] clay [illegible]
44 ft. [illegible]
[illegible]
7 ft. clay [illegible]
2 ft. [illegible]
2 ft. [illegible]
1 ft. [illegible]
1½ ft. [illegible]
11 ft. shale
7 ft. [illegible]
2½ ft. [illegible]
5½ ft. [illegible]
[illegible]
15 ft. [illegible]
[illegible]

Richmond Reservoir hole section
250 E of Reservoir

Yellow Richmond
Light clay rock. Base Richmond
2 ft. splitting clay rock
4 ft. hard blue limestone fossils
1 ft. very dark shaly rock
2 ft. hard dense limestone
2 ft. thin layers [illegible] by [illegible]
1 ft. very dense blue limestone
11 ft. shale bed, brown [illegible]
6 layers as well as shale
[illegible] is more sandy
3 in. hard l. [illegible]
1 ft. 3 in. fossiliferous clay rock
17 ½ ft. hard [illegible] part
NE of reservoir at point [illegible]
that [illegible]
Rather [illegible]
5½ ft. [illegible]
hard, [illegible]
3 ft. dense [illegible]
[illegible] off N.

251. Maria Nemby [illegible], Bridge 54.
Clean [illegible] and [illegible]
[illegible] 12, down to
10 ft. [illegible] A dirt dis-
[illegible], a [illegible] argillaceous [illegible] with Rafin-
esquina, and a few Platy-
stropha. This [illegible]
[illegible] argillaceous [illegible]
bedded.

252 Middletown station, bridge 52.
Same argillaceous rocks as 251 but

with thin sandy limestone interbedded.
Also Platy [illegible] here.
Most [illegible] this [illegible]
[illegible] to [illegible]
[illegible] great [illegible]
a few [illegible] Helderberg
[illegible] [illegible]
[illegible]

253 OB [illegible] page 49
Road - [illegible]

254 OB [illegible] page 46.
[illegible]

255 OB [illegible] page 46.
[illegible] Cuyahoga
[illegible]

256 [illegible] page 43
[illegible]
[illegible]
[illegible]
[illegible] Hayden
[illegible] Edwin [illegible]
[illegible]

257 Clay Miller mill. [illegible]
[illegible] are [illegible]
[illegible]

[illegible] 39. at [illegible]
½ mi [illegible] Valley
[illegible] Yesington [illegible]
[illegible] R.R. [illegible]

[illegible] 4½ ft [illegible]
[illegible] to [illegible] Lexing-
[illegible] Ch.

20.
[illegible] Stagh [illegible]
[illegible]
[illegible]
9 [illegible] on NE
[illegible]
[illegible] Cuyahoga [illegible]

[illegible] from here
[illegible] most [illegible]
[illegible]
[illegible]
[illegible] Helderb
2½ ft [illegible]
1½ [illegible]
46½ [illegible] scale. [illegible]
10 [illegible]
2 ft [illegible]
at [illegible] and [illegible]
[illegible] 1 ft [illegible]
2 ft [illegible]
3 [illegible]

with thin sandy [illegible] interbedded.
Also [illegible] [illegible].
West wind [illegible] [illegible]
[illegible] to explore
[illegible] great [illegible]
a few [illegible] Hebertella
[illegible] [illegible]
and [illegible]

253 Bridge 49
Road - public - [illegible]

254 Bridge 46.
A [illegible] [illegible]
[illegible]

255 Bridge 47.
[illegible] common,
[illegible] Crinoid stem
[illegible]

256 East of Hayden. Bridge 43
Joint [illegible]
15 ft [illegible] by [illegible]
17 ft [illegible] [illegible]
6 ft [illegible] [illegible] l.
R R level.
A [illegible] [illegible] of Hayden
is a [illegible] with Eden [illegible] to
R R level, [illegible]
[illegible] [illegible]

257 Clay Miller mill. Wing [illegible]
[illegible] are [illegible] [illegible]
[illegible] [illegible] [illegible]

258 Bridge 39. at [illegible]
church. ½ mi East of [illegible]
River. Near Lexington [illegible]
5 13 ft above R R [illegible].

259
{ Stropheodonta [illegible] } 4½ ft below
{ Dinorthis [illegible] } top of Lexing-
{ Rhynchotrema [illegible] } ton.

260
261 Gannett.
262. Bridge 66. Stropheodonta [illegible]
263 Scale [illegible] house. The [illegible]
[illegible] [illegible] [illegible]
[illegible] R R [illegible].
264 Bridge 68. Large house on NE
265 Orthorhynchula
266. Large exposure [illegible] Gale [illegible]

---

248 Section [illegible] from here
R> Stropheodonta planumbona, [illegible]
In place, [illegible] [illegible]
4 ft { Rhynchotrema [illegible]
{ [illegible] [illegible]
2 ft [illegible] [illegible]
2½ ft [illegible].
1½ ft [illegible] [illegible]
46½ ft [illegible], from [illegible]
10 [illegible] [illegible] at [illegible] [illegible]
2 ft [illegible] [illegible] with [illegible]
at base and later [illegible]
[illegible] [illegible] 1 ft [illegible]
2 ft [illegible].
3 ft [illegible] with [illegible] [illegible].

½ ft day
1 ft
3 in
place.
pike.
17 ft
3½ ft
2 ft
2 in
R 4 ft
5

31 ft
2 ft
51½ ft
6 ft

Rear Hatch, 5 ft, Bow 3 ft
10 ft
38 in
33 ft
22 ft
25 ft
13 ft
20 ft
5½ ft
22
3
2 ft
5½ ft
7 ft
8½
6 in

11 ft
3½ ft

S W [illegible] Yarrington Pit.

In reverse order

Beneath [illegible] gravel
[illegible] gravel
[illegible]
[illegible]
[illegible]
[illegible]

Beds [illegible]
Clayton [illegible]

20 ft – Thick gravel
[illegible]
[illegible]
[illegible]
– Barrington shell

---

10 ft Interval
Yes as, [illegible]
Eight feet [illegible] at [illegible] ft up
Shell [illegible] not [illegible] medium

Dunmow [illegible]
Orange [illegible]
2 ft [illegible] with [illegible]
[illegible]
2½ ft [illegible]
2 ft white [illegible]
2½ ft [illegible] standard,
5 ft [illegible]

R < 10 ft [illegible]
1 ft [illegible]
1 ft [illegible]
2 ft [illegible] gravel.
1 ft [illegible]
1 ft [illegible] gravel.
1 ft [illegible]
1 ft [illegible] from [illegible] & [illegible]
[illegible] from [illegible]
7½ ft [illegible] clay
2 ft [illegible] clay interbedded
1 ft [illegible]
1 ft [illegible] clay interbedded
1 ft 3 in [illegible]
1 ft 6 in [illegible] not exposed.
½ ft Clinton, with a fall of [illegible] ft [illegible] gravel.
8 ft Massive, P. productus [illegible] ordinary P. productus

---

1 ft [illegible]
6 ft [illegible]
½ ft [illegible] clay.
½ ft hard yellowish [illegible]
Layer.
7 ft soft clay with [illegible]
1½ ft [illegible]
2 ft hard [illegible]
1 [illegible] clay [illegible]
2½ ft [illegible] clay.
½ ft [illegible] of [illegible] gravel.
2½ ft hard [illegible]
2½ ft Soft [illegible] gravel.

Divide by Shaw

R <

½ mi S and of [illegible] and
1½ mi S and of Tale [illegible]
Section base.

24 ft Massive, blue [illegible]
and medium [illegible] clay
[illegible]

20 ft about / [illegible], [illegible]
Aquasigillum C. [illegible]
[illegible] C. [illegible]
[illegible]
[illegible]
[illegible] very large
[illegible]

6 ft standard with Martinia
[illegible]

3 ft [illegible]
with Martinia [illegible] C. and
some small Pentremite, the
[illegible] and,
[illegible]?

2 ft Oolitic, with Pentremite
elongatus.

[illegible] ft Rock like St Louis [illegible]

Apparently there is no [illegible]
[illegible] of rock [illegible] St Louis
and of [illegible] as [illegible] with
Pentremites, at least
for south as the cut N of
Tate on the [illegible] Martinia
[illegible] Aquasigillum [illegible]
[illegible]

Ob[illegible]

6 ft [illegible]
20½ ft [illegible] clay
10 ft [illegible]
28 ft Clay + [illegible]
24 ft Massive blue [illegible]
20 ft about oolitic [illegible]
< 6 ft standard. Martinia
3 ft [illegible] Martinia
2 ft oolitic. Pentremites elongatus

[illegible] with of [illegible]

Oolitic rock Massive
< Cincinnati 166 miles
4 ft 3 in Bedded [illegible] not weathering gully?
→ 1 ft. ss. [illegible] [illegible]?
9 ft [illegible] Massive [illegible]
10 ft Bedded [illegible] Syringopora [illegible]
3 ft [illegible] Leptaena [illegible]
2 ft [illegible]
[illegible]
[illegible] C.
[illegible]
10 ft [illegible]
[illegible]
[illegible]
9 ft [illegible] Crinoid [illegible]
[illegible] at [illegible]

267. [illegible]
268. [illegible] Rhynchotrema [illegible]
[illegible] fragments
269. Rock, [illegible] rock below
[illegible]
270. Chert, [illegible] 8 inches
but no fossils
271. Limestone, hexagonal +
cylindrical in chert.
272. Rapid metamorphic Gartha
273. Next there is Lithostrotion
Cylindrical in [illegible], in a very
Cherty [illegible] [illegible]
[illegible] chert [illegible]
[illegible]
274. [illegible] Platyceras
[illegible] smooth = Harrison
[illegible] Type, Oct. 22 [illegible]
Bended into Cameroceras near
middle = Cummins Station
275. [illegible] the very [illegible]
Section No. of Marbles
5½ ft. fine grained chert, l.
Lithostrotion [illegible]
5½ ft. fine grained, + few Syringopora
5½ ft. less granular = [illegible]
4 ft. granular + little chert
7½ ft. = top [illegible]
5½ ft. Soft [illegible] clay.
6 ft. Bandy
4 ft. Soft l. [illegible]
8 ft. [illegible]
[illegible]
2 ft. [illegible]
7 ft. [illegible]

1½ ft. [illegible]
4 ft. [illegible] = shaly l.
2 ft. [illegible]
together = Cummins Station
[illegible] fine grained, [illegible] bedded
1 ft. [illegible]
14 ft. [illegible] Spirifer [illegible]
[illegible] Crinoids, crowded [illegible]
21 ft. [illegible] blue clay.
[illegible] with large reddish chert, [illegible]
[illegible] indurated Kurtz [illegible] like rock.
6 ft. soft blue clay.
14 ft. [illegible] rock.
5 ft. Rather coarsely granular l. with [illegible]
large Crinoid stems, [illegible]
[illegible] Spirifer. = Harrisburg
The [illegible] section, perfect,
[illegible] places [illegible] belonging to
the underlying rock, [illegible] in
like indurated Kurtz [illegible]
6 ft. [illegible] rock, but more
10½ ft. [illegible] l. but partially
silicified with [illegible]
½ ft. greenish [illegible] clay [illegible]
17 ft. Cherty, soft blue clay shale
[illegible] but [illegible] silicified Kurtz
with a few [illegible] and [illegible]
4 ft. [illegible] [illegible]
[illegible] in Kurtz.
5 ft. Sandy [illegible]
25 ft. More indurated Kurtz
L. 124 [illegible]
4 ft. [illegible]
Bar [illegible] for Loc 277

276. Residual top of 57 9 mi followed by white Cherts which near base have small shells suggesting Spongin Types. The rock is white near the base.

277. Fine grained, well bedded. Crowded by white,

278. Great thickness of white. At least 25 ft thick.

279 Lithologically cylindrical

280 Two feet of Spongin which have contained quartz scattered upto 1/32 in. but very few fossils and these not characteristic. Recognized lithologically, compared with Wellsville section = 100 ft U S & S.

4 ft soft clay

Reddish quartz & chert nodules such as occur at top of Wellsville section at Wellsville.

281. No trace of Spongin.

4 ft soft clay

← Top of reddish chert, middle layer

3 ft interval from top of chert layer down.

1/2 ft l. = transition bed

5 1/2 ft. white chert

1 ft ← Chocolate chert, scarcely in place.

50 ft Interval until Stone Fort stone bridge about 3 ft thick near middle,

Second bridge

Jamestown.

282. 13 feet of freestone about 2 ft above platform level.

At a lower level in the south face of the mound out, an upper fetet, very much thicker, shows up.

283. But the upper foot of the 282 which is about 8 ft thick, comes down to platform level.

284. Great thickness of Trans & Tranquil 3 1/2 ft Massive

R > 5 ft Massive arg. rock — red chert nodules

1 ft upper layer, platform level arg.

3 1/2 ft Massive rock — Spirifer Rockfeller

9 ft massive rock, crinoidal & fragments bryozoa, and crinoidal, as in Hamilton occasionally, in upper Tentaculites + Rhipidomella duria.

about 7 ft Wellsville rock.

R > No trace of Spongin here.

285 Navigation from Big Hill, by Sandy Lake, St Louis with 2 and grains 1/32 in diameter, = Spongin

8 ft Interval as Wellsville rock reddish nodules gerdrifer in masses, a trace as below within Spongin section.

No trace of Wellsville. Very massive 2 Cambstone.

286 Bill and Mrs. Merrill.

R> 11 ft [illegible] yellowish brown.
1½ ft fine grained limestone.
4½ ft Hard [illegible]. Soft below.
6 ft Hard [illegible] above. Soft below.
7½ ft Hard [illegible] above, soft below.
2½ ft Hard rock.
2 ft Soft rock.
2½ ft Hard rock.
4 in. Soft. Gray [illegible] clay.
14½ ft Yellowish rock. Chert nodules at top.
~~H H~~ [illegible]

S> (top)
both top and bottom. Sandy at base + Pentamerus [illegible]
8 ft (oolitic at top with [illegible]
19½ ft oolitic at base = Frederick.
3 in. { Brassfield
< { Sandy conglomerate at top of Clinton
31 ft St Louis.
4½ ft Yellowish [illegible] crinoid [illegible].
7 ft Limestone [illegible] fossiliferous [illegible]
R>

T> Sandy [illegible]
2 ft (S) [illegible] clay [illegible]
Chert [illegible] [illegible]
3 ft [illegible]
8 ft [illegible]
11 ft fine grained [illegible].
S>

U> Top of Chert [illegible]
17½ ft Gray [illegible] Chert.
8½ ft [illegible] at base which [illegible]
(most of section.
27½ ft [illegible] No [illegible].
Some [illegible] with [illegible]
[illegible] in large [illegible] [illegible]
[illegible]
30 ft Drift [illegible] No [illegible]
T>

287. Point [illegible] Tate layer.
288. Orthis [illegible] layer, covered by Tate layer + Cryptotrete rock.
289. Sandy [illegible] Pentamerus.
White [illegible]
Anticline [illegible] + Fayetteville
Some Anticline [illegible] shale,
Dove colored [illegible] Cryptotrete,
Some Cryptotrete with [illegible]
= [illegible]

Anticline Fayetteville [illegible] 60 ft above creek level.
290. Dove colored [illegible] about [illegible]
Some [illegible] = Some Cryptotrete.
Tate layer in [illegible]
291. NW of J. M. Campbell.
Anticline here at sea level + Fayetteville [illegible] + Schizobolus [illegible] dentata
1 ft [illegible] dark [illegible].
Represents Some Anticline [illegible]

292. South of Jerry Russell's
Lotechia. abundant

2 ft [illegible] fossiliferous
[illegible] Richmond limestone [illegible]
5 ft [illegible] Yellowish [illegible] pendersa
5 ft dove colored [illegible] fossiliferous.
13 ft [illegible]
creek > upper dove colored Corynella
down the creek.

293. Lower, thin bedded, [illegible] rock
[illegible] Corynella & [illegible]

294. Above Spring [illegible]
Tarnerus [illegible]
Depth [illegible]
[illegible]
[illegible] Shale [illegible]
above and the [illegible]
[illegible]
[illegible]
dove colored [illegible]
[illegible]
[illegible]

226 / R>
[illegible]
11 ft [illegible]
[illegible]
[illegible]
[illegible]
[illegible]
6 ft [illegible]
[illegible]
5 ft [illegible]
[illegible]
11 ft [illegible]
[illegible]
[illegible]
26 ft [illegible]
5½ ft [illegible]
22 ft [illegible]
[illegible]
22 ft [illegible]
20 ft [illegible]
[illegible]
[illegible]
[illegible]

20 ft [illegible]
R>

228) [illegible]

[illegible]

11 [illegible]

9 [illegible]

2 [illegible]

14 [illegible]

15 [illegible]

16 [illegible]

20 [illegible]

290. [illegible]

[illegible]

at 900 [illegible]

296. [illegible]

297. [illegible]

298 – 928 [illegible]

[illegible]

299. [illegible]

[illegible]

Cyanide [illegible]

301 [illegible]

302. [illegible]

[illegible] at least
6 ft. this it should be [illegible]
head that [illegible]
interweaves [illegible]
Below the middle [illegible]
[illegible]
in [illegible] weathers [illegible]
[illegible] at least [illegible]
[illegible] but with [illegible]
few [illegible] including the [illegible]
long [illegible] the
[illegible] which [illegible]
at top.
Top of section [illegible] 970 ft. [illegible]
[illegible] from [illegible] conglomerate,
303. Sandstone [illegible] [illegible] length [illegible]
[illegible] large
[illegible]
[illegible]
[illegible]
[illegible]
304. [illegible] Rhynchonella
[illegible]
[illegible]
[illegible]
305. [illegible] Hebertella. Dal-
manella. C. [illegible]
306. [illegible]

Large [illegible] 4 in wide
Siphuncle 1½ in wide. Chambers:
10 in 3 inches. Siphuncle [illegible] on
wall of outer shell and [illegible] septa
turn up there.

Cer[illegible]
Bailey [illegible]
[illegible] appearance. Use
[illegible] for [illegible]
307. [illegible] section
about 5½ ft. thick, medium
[illegible] fine grained [illegible] at
base of [illegible] face of Dal-
manella [illegible]. The top
of the [illegible] is fairly
well [illegible] with Dalmanella
fragments. [illegible]
the top 13 ft. are [illegible]. The
typical Cincinnatian [illegible]
at 308 [illegible] long [illegible]
[illegible] at least [illegible]
Cincinnati 19 or 20 feet below
the [illegible] typical [illegible],
as well as [illegible] Cincinnatian [illegible],
308. [illegible] 8 ft. [illegible]
[illegible] [illegible] deep [illegible]
[illegible] in [illegible] of the
locality.

309. Fossiliferous Cardwell mudstone, about 1 ft 7 inches bedded, sandy looking bituminous with few fossils, and 5 ft 7 in in massive bedded l. with chert at base at 310.

310. Chert at base of Cardwell 4 inches thick.

311. Cardwell shale with Cantinia, Inoceramus and Dimorphoceras, Inoceramus lucifer and Exogyra ponderosa specimens.

312. Cardwell shale.
Volcanic clay about 2 ft.
Top of this is black.

313. Cardwell shale.

314. Highest part of Cardwell. Spurgin hill to 950 mostly shale [illegible] in the long.

315. [illegible]

316. Cardwell, Colorado, Blackhillian, Dimorphoceras, Rugodiscus, Scaphites, Prionocyclus, Desmoceras.

317 Fossils in place.

30 ft. [illegible]

Rising from Cardwell [illegible]

15 ft in [illegible]
Colorado
7 ft in [illegible]
[illegible]

Page [illegible] vertical with plenty of [illegible] almost over the [illegible]

Bed of 317 There is a [illegible] with no dip where [illegible] dip was expected.

318 Mostly [illegible] dip [illegible] and dip [illegible] expected.

319 [illegible] Just at [illegible] dip [illegible] can be determined [illegible]

320 [illegible]

321 [illegible] 970. [illegible]

807-809 [illegible]

323

412 + 17 = 29 — = 860

325

326.

16A - Pathyrus

327.

328.

329.

152

10 feet above the

332.

11 ft

5 ft interval, [illegible]
[illegible] clay [illegible]
[illegible]

The preceding section is very poor as far as concerned the [illegible] but it is certain that the Niagara [illegible] in Wayne Co. [illegible]
[illegible] Section [illegible]
5 ft of the Niagara [illegible]
[illegible]
The Niagara [illegible]
[illegible] in field of Bigby [illegible]
[illegible] 11 ft [illegible]
[illegible] Waynesville,
[illegible]

---

154 Near Sulphur Creek, Lebanon.
Tetradium 9 in below Dev. Sh.
Columnaria vacua 1½ ft below Dev. Sh.
Col. vacua, 3, 2½ ft below Dev. Sh.
Columnaria tubes [illegible] between 1 and 2½ ft below Dev. Sh.
6 in ng. dark with vertical Beatricea [illegible]
Cincinnati, like a carrot with [illegible]
[illegible] down

159. Near the top hill S of Sulphur Creek, Nodule layer.
9 ft [illegible] = Rhinchonella.
Rhy. [illegible] + [illegible] bone,
7 feet below. This stone [illegible]
Grey Waynesville. Nodule was [illegible]
[illegible] ft below

---

159 [illegible] Plat. did not [illegible]
2 ft [illegible] fossil. [illegible] with
6 in [illegible] clay [illegible] soft.
32 in. Plat. pinnatum.
24 in. [illegible] + Plat. pinnatum.
30 inches fossiliferous.
Left [illegible] place.
7 ft [illegible] dry, rock.
[illegible] dove colored.
Shale layer of Waynesville.
4 ft [illegible]
1 ft Nodule layer,
and [illegible] fossil. [illegible] Waynesville
2 ft [illegible] fossil. Limestone thus

All of preceding [illegible] Lebanon [illegible] Sewer Settlement.

333 Berge Lockett, about ½ mile S of Lebanon - Bradfordville pike
Plat. pinnatum [illegible] as far as next number.

334. Base of Dale layer. Dev. l.
160. 49 ft Shaly Lower Waynesville.
nodules in white [illegible] clay
16½ ft [illegible]
Lepidodendron bone, just above a pile of [illegible] nodule, [illegible], which [illegible] typical dove colored l.

The Dev. l. is just above the 49 ft of Lower Waynesville.

5 ft [illegible]

.2 + .8 depths, add + 2

.6 then that is impossible
= mean.

Subtract, with what
water must be in flume,
Multiply this by .9
= mean,

Subtract [illegible] to find the
weight.

For measuring discharge D discharge in
Total Area

Use bend upstream bridge
about 100 away from bridge

In case of floods use 10,ft
section gauges

Find angle of water to
Correction must be made
with bridge restricted,

Consult on Nearing Rapids Gravity
New York Standard Watch Co.

Forbush or
Locke.
Wolf Co.
Gurney Co
Jenness
Kendall
[illegible]

at 15 ft [illegible]

bridge.

for angle made by water

[illegible]

Strophomena retusta
Weisburg, [illegible]
top of Magnesian
Ballston top of [illegible]
Near Lansingburg Ind. p. 169 Lisbon
Bed B in Columbia Co., Wisconsin

Strophomena planumbona
Weisburg, [illegible]
top of Magnesian
Ballston, top of [illegible]
Near Lansingburg, Ind. p. 102 Lisbon,

Strophomena gonioline
Fig 32, Middle Bass
Fig 51 Middle Bass

Strophomena [illegible]
E [illegible] near Burlett Ferry & M.
Fig 23, Lancaster, Hip. Fairmount
Fig 26 Fairmount & Lancaster Ferry
Fig 34 "
Fig 49, Fairmount
Fig 50 "
Fig [illegible]
Fig [illegible]

♣ ♠ ♡ ♢

Grand. When jacks are trumps

20 out of hands not picking up the Skat

16 If picking up Skat

12 If turning, changed to grand.

12	11	10	9	Solo.
8	7	6	5	Tourney

Null.

20 played out of hand

20 when taking up Skat but lose 40

Null a contract played out of hand make 40 and lose 40

with skat. make 40 and lose 80

Spade made 61

Schneider made 91 — 1 extra

Schwarz made 120. — 2 extra

If you announce Schneider before playing till you get 1 extra pt.

Schwarz. 2 extra

J — 2

A — 11

10 — 10

K — 4

Q — 3

9

8

Two blacks J 10

12

14

16

Two blacks.

Done 3

2 Skat

4

3

The cards you discard count for you.

Strophomena alternata pp. 79, 92.
Bald Point? Inn? [illegible]
Glyptorthis insculpta 31 ft below Billsmine
= 46 ft above Sta. [illegible]
Small [illegible] of Tetradium cut.

Leptaena
[illegible] Liberty run base
Maysville [illegible]
Fig. [illegible] Camden to [illegible] Hillsboro
Fig. 13. Tetradium [illegible]

Strophomena alternata
[illegible] 9 ft above [illegible]
and 11 below [illegible]
Bald B. [illegible]

Strophomena planumbona
1 3/4 mi West of Verona, Ky = 27 3/4 miles
from Cincinnati, above.
Plect. neglecta of Mt Hope
11 ft above Oldendale Sta. Ohio,
100 yds west of station.
13 ft above base of section at Clay
Banks west of Glendale, p. 91.
Fig. 34. Tetradium [illegible].

Strophomena magnivillensis
1/2 mi E of Oldendale Sta. where road crosses
P.R., associated with Plectorthis
neglecta, Dalmanella multicostata,
Platygonium profundum and [illegible]
= Mt Hope.
Bald Point? Inn? west of Strophom
top = 77 ft below top of Tetradium
[illegible] on Bald Point base. =
at base of Tetradium cut = 7 ft thick
65 ft from base of massive Strophom.
magnivillensis limestones to
road 1 mile East of Lewisburg
[illegible] Dalmanella
multicostata [illegible]
base. [illegible] see Glyptorthis page 78.
Hamilton school, 2 mi out of
Bentonville, page 81.
Lost Creek 4 1/2 mi out. 55 to 66
ft below top of road, [illegible]
limestone [illegible] Str. magnivillensis
380 ft above Ohio River at Portsmouth
Ky? see page 84. [illegible]
Ulrichia multilineata [illegible]
[illegible]

Oct 25. Billed. No. 413.

5 half tones.
East of Brassfield, limest.
East of Brassfield, nearer.
Brassfield L. W of Paulin
Plum creek.
Dev. Brassfield.

Lexington. Ky.

Treasurer's check. No 8551 for $4.00
on the account of Jan 3rd.

1 zinc etching	——	$0.75
2 zinc etchings	——	$3.25
		$4.00

Jan 5. — No. 2047. $17.00
3 H. Tones. fossils 2 nat size
Silurian fossils.
Plate brachiopods
Plate Favosites
Plate Lyellia ordinary.

Oct 4 Billed.
Sept 28 — No. 618. $1.75
1 H-Tone View.
Man standing by fence,
Lulbegrud creek.

Sept 22 - No 538 14.25
Sept 27 Billed
4 Half Tones. views.
Lexington in pencil.
Dev. W. of Clay City.
Orvine. Estill Springs.
Indian Field. Clinton.

	Engr.	What we owe.
May 31	$37.20	4 plates of fossils. Cin. Gr.
June 30	$220.10	17 plates of fossils Cin. Gr.
(Sept 18	$ 1.25	book store)
Sept 30	$ 14.25	4 halftones. See 538 here
Oct 31	18.95	5 halftones See 913 here.
Nov. 29	10.66	
Nov. 29 (Oct)	1.75	1 halftone. See 618 here.
Dec. 30	72.84	
Jan 31	21.00	See No
March 30	36.	
April 3.	11.50	

$4.00 + 2.047 here = $17.00

(Sept 20	cash.	1.25)	
Oct 25		$ 257.30	C.J.N.
Nov. 3.		$ 18.95	A.F.F.
Dec. 2		$ 34.95	C.J.N.
Dec 12.	Eng. Cred.	4.00 = credit.	
Dec. 14		$ 14.00	unknown.
Jan 19		$ 62.50	C.J.N.
Jan 26		$ 4.00	C.J.N.
Apr. 20		$ 47.50	C.J.N.

C.J.N. still owes $17.00.

Halftones at Burnside Lake
Jackson Island

Ma

Jun

(Se

Ar

Ar

2

Ashheim
Mt Auburn 20
Cragmile
Bellevue 60
Tamanut 20
Mt Hope 80
Sa

11 — 35
11 — 35
11 — 35
44 11 — 45
35 5 — 2
49

Any report to
Mrs Thresher
Dr Austin
Prof Miller
Prof Morefield

John Edward
Joe boat men. $8.00
George Dana 35-40

other sheet	164	L.
	165	L
following 171.	E.	L
	~~F.~~	~~L~~
	~~H.~~	~~LR~~
~~Wm J Horgan~~		~~LR~~
~~Jno Isaacs~~		~~L~~
	~~J~~	~~L~~
~~S. Hardin~~		~~L~~
~~Jno W. Reed Blank~~		~~L~~
next page		L
~~Mesritts~~		~~LR~~
~~248 New Objection~~		~~R~~
289		L
~~291~~		~~LR~~
292		~~L~~
~~Leonard Mc 152~~		~~L~~
~~S. Hoxhill 159~~		~~LR~~
" ~~160~~		~~L~~